# BUSINESS WEEK



Westinghouse's Knox: He wants the world for his "home market" (page 148)

A McGRAW HILL PUBLICATION

SEPT. 8, 1956

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C B POWER MICHOPILMS



#### Paul Bunyan's bowling ball proves bearings!

This game of tenpins would have been fine sport for the "great lumberman"! Yet, even Paul Bunyan would have taxed his strength in helping to clear as much as 50 acres an hour with this giant steel ball.  $\not\approx$  Today's giant 'dozers, however, are doing this rugged job with ease. And, nearly every leading make is equipped with Bower Straight and Tapered Roller Bearings—proving their ability to stand up under such back-breaking pressure. That's why more manufacturers—regardless of product—depend on Bower Roller Bearings than ever before. They know that improved design plus painstaking quality control make Bower bearings last longer—require less maintenance  $\not\approx$  What about your product? If it uses bearings, choose from Bower's complete line of tapered, straight and journal roller bearings for every field of transportation and industry.

BOWER ROLLER BEARING DIVISION
FEDERAL-MOGUL-BOWER BEARINGS, INC. • DETROIT 14, MICHIGAN





TWO-LIP RACE INCREASES RIGIDITY

Two parallel shoulders, made integral with the outer race on this straight bearing, increase rigidity and durability-keep rollers in proper alignment. Precision-made rollers and races assure quieter, smoother operation.

ROLLER BEARINGS

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#### FIGURES OF THE WEEK

1947-49=100				19	47-49=10	100
50						150
40		~~	~	~		140
30	1054					130
20~~~	1956	)				120
10 1951 1952 1953 1954 1955	J F N	A M	1,,,,,	A S	0 N	110
USINESS WEEK INDEX (chart)		1946 Average 91.6	Year Ago 139.7	Month Ago 143.0	Wook Ago †145.7	§ Late Wool *145
RODUCTION						
Steel Inget (thous. of tons)		1,281 62,880 \$17,083 4,238 4,751 1,745 167,269	2,264 105,680 \$56,241 10,706 6,662 1,607 291,453	1,415 140,989 \$59,189 11,190 7,065 1,505 280,659	12,389 189,086 \$63,292 11,340 7,127 11,647 270,150	2,4; 76,9; \$62,6; 11,5; 1+7,1; 1,6; 274,0;
RADE						
Carloadings: miscellaneous and I.c.I. (daily av., thous. of cars)  Carloadings: all others (daily av., thous. of cars)  Department store sales (change from same wk of preceding year)  Business failures (Dun & Bradstreet, number)	*******	82 53 +30% 22	74 58 +9% 215	63 45 -1% 282	71 57 +5% 215	+8
PRICES						
Spot commedities, daily index (Moody's, Dec. 31, 1931 = 100) Industrial raw materials, daily index (BLS, 1947-49 = 100) Feedstuffs, daily index (BLS, 1947-49 = 100).  Print cloth (spot and nearby, yd.) Finished steel, index (BLS, 1947-49 = 100).  Scrap steel composite (Iron Age, ton)  Cepper (electrolytic, delivered price, E & MJ, Ib.).  Wheat (No. 2, hard and dark hard winter, Kansas City, bu.)  Cotten, daily price (middling, 1 in., 14 designated markets, Ib)  Weel tops (3oston, Ib.).		311.9 ††73.2 ††75.4 17.5¢ ††76.4 \$20.27 14.045¢ \$1.97 **30.56¢ \$1.51	407.6 97.2 79.3 18.9¢ 153.9 \$43.83 44.856¢ \$2.07 34.73¢ \$1.79	419.1 96.0 82.3 18.6¢ 158.5 \$55.50 39.810¢ \$2.15 32.97¢ \$1.83	425.7 97.5 81.3 18.6¢ 168.6 \$58.17 39.950¢ \$2.22 33.03¢ \$1.83	425 97 81 18. 168 \$58. 39.94 \$2. 33.0 \$1.
INANCE						
90 stocks, price index (Standard & Poor's)		135.7 3.05% 34-1%	346.8 3.59% 2½%	391.9 3,88% 3%-3¼%	378.9 3.96% 3%%	379 3.99 3%
SANKING (Millions of Dollars)						
Demand deposits adjusted, reporting member banks	*******	††45,820 ††71,916 ††9,299 ††49,879 23,888	55,931 84,412 24,171 30,948 25,217	55,556 84,609 28,734 25,978 25,172	55,007 85,857 29,182 26,859 25,642	55,3 85,5 29,1 26,5 25,4
MONTHLY FIGURES OF THE WEEK			1946 Average	Year Ago	Month Ago	Late
Private expenditures for new construction (in millions)	July	*******	\$803 \$197 \$6,704 \$3,174 \$21.3	\$2,893 \$1,312 \$32,896 \$25,476 \$43.9	\$2,829 \$1,365 \$37,093 \$28,890 \$49.1	\$2,86 \$1,47 \$37,14 \$29,10 \$49

\*\* Proliminary, sweek ended Sept. 1, 1936.

\*\*\* Ten designated markets, middling 15/16 in.

\*\* Ten designated markets, middling 15/16 in.

\*\*\* Ten designated markets, middling 15/16 in.

\*\* Ten designated markets, middling 15/



# How many years have research, drugs and doctors added to your life?

Alexander the Great died at 33, Mozart at 35, Keats at 26. Generations ago it was an accepted tragedy of life that legions of the young and promising would be swept away by disease.

One by one, serious maladies have yielded to scientific attack. In the past 56 years alone, life expectancy has increased an amazing 21 years, and climbs steadily.

Continuing research by pharmaceutical companies is one reason why people live longer and healthier. Typical of the new drugs—tetracycline, the antibiotic that eliminates

the terrors of many infectious diseases; tranquilizing drugs, such as meprobamate, which permit thousands of tense, high-strung people to lead productive lives.

In far-sighted research—new and more efficient products—the pharmaceutical industry, working in an atmosphere of economic freedom, shares with the medical profession a major contribution to mankind. How banks may play a part in scientific progress is aptly illustrated by our own close association with pharmaceutical companies. For many years Bankers Trust, with its correspondent banks, has worked with leading pharmaceutical manufacturers, supplying financial services adapted to their special needs. We would like to do the same for you in your business. Call on us.

# BANKERS TRUST

16 Wall Street, New York 15, N.Y. Rector 2-8900



Member Federal Deposit Insurance Corporation A brave little girl ... a cardiac golfer . . . a tale of two hearts

# Wausau Story



Cardiac golfer, M. W. Kyler gets tip from pro Willie Stepanik as American Heart Association representative looks on

by HENRY D. SAYER, Former Industrial Commissioner of New York State

In years of dealing with insurance matters, I had many contacts with Employers Mutuals of Wausau.

So the city was familiar to me although I'd never visited it.

"So I was especially glad to see first-hand the unique personality of this community. A community that got its roots from big timber and that's grown up to a busy, progressive city yet with its heart still bound close to deep woods and fishing streams.

"My tour of the city took me out to the Wausau Country Club where I saw Mr. M. W. Kyler playing golf. Mr. Kyler had a heart attack 18 years ago but still leads an active business life. Here in Wausau I found that sports therapy, so much in the news today, is never more than 5 minutes away from anyone.

"But I think what came closest to expressing for me the warm friendliness

of the Wausau way of life was the story of little Sandra Hoile. An article about Sandra's rheumatic fever appeared in the Wausau paper. Ever since then the entire community has taken her to its heart. As a grandfather I couldn't help wishing as I visited Sandra that all little girls could. grow up in a community like Wausau. I'm glad I finally got to see Wausau.'

#### **Employers Mutuals of Wausau are** "good people to do business with"

We here at Employers Mutuals are glad we grew up in Wausau. And we're always happy when folks like Mr. Sayer share our sentiments and pride in the Wausau way of doing things. We figure to keep on growing but never to outgrow our Wausau born idea that, in business as in daily living, friendliness and helpfulness should prevail. You'll find two tangible results of that outlook when you do business with us: unexcelled service on claims and an accident prevention program that means lower insurance cost to policy holders. We write all types of fire and casualty insurance and are one of the very largest in workmen's compensation. If you call on us in any of the 48 states, you'll find there's a "little bit of Wausau" wherever we do business.

. the community's heart is showing. Brighter future for 8-year-old Sandra Hoile



Employers Mutuals of Wausau



Good people to do business with

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#### READERS REPORT

#### Arizona Enthusiast

Dear Sir:

I am sorry to have not written you sooner to compliment you and your organization on the excellent article concerning Arizona which was published in the June 23'56 (p114) issue of BUSINESS WEEK.

We, who live here, are enthusiastic about our state and wish to express our appreciation for your very factual article. It was correct in all aspects and is an excellent promotional aid to the parties directly working for the development of this area.

L. M. ALEXANDER ASSISTANT GENERAL MANAGER SALT RIVER PROJECT PHOENIX, ARIZ.

#### Too Modest

Apropos of The Kind of Giving That Helps [BW-Jul.7'56,p144] your recent correspondent, Kenneth G. Patrick, Manager-Educational Relations, General Electric Co. [BW-Jul.28'56,p10] was perhaps too company-modest to mention a volume defining a philosophy of company policy respecting all philanthropic giving.

Another of General Electric's managers, Richard Eells, does this in the recent Harper volume, Corporation Giving in a Free Society. He finds the answer in the Corporation's need "to preserve and maintain the vital private sectors in the corporate environment." This means support of instruments for promoting the well-being of the family; the local community; "healers of body and soul"; associations of scholars, scientists, writers and artists; labor unions and business enterprises; as well as educational and religious institutions.

ROBERT D. HAYES

RISSCO ALEXANDRIA, VA.

· We reviewed Richard Eells book in our Aug. 18 issue (p 46).

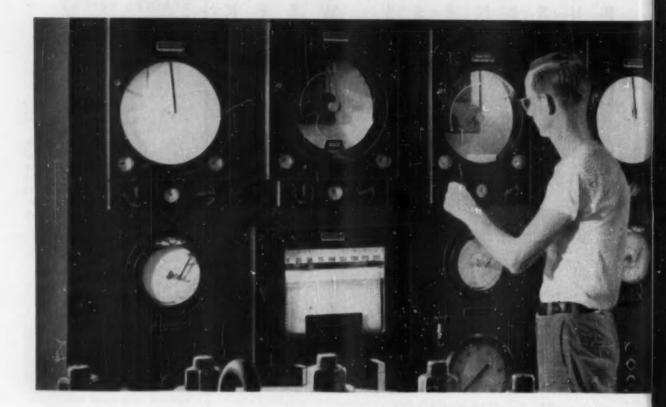
#### Ohio's Standing

Dear Sir:

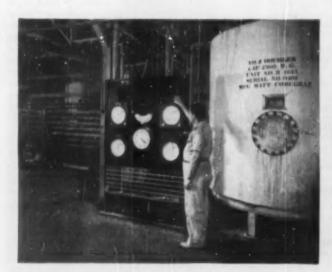
BUSINESS WEEK [Jul.21'56,p128] notes "If it isn't already, Ohio soon will be the state with the second largest automotive industry."

We'd always taken it for granted that Ohio was second, but your comment stimulated us to check the official employment figures. Here's

Toronto Bureau: Jean Ross-Skinner

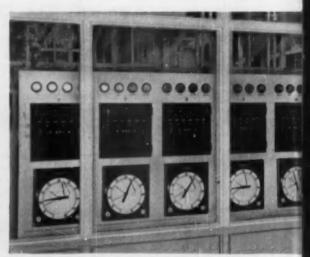


#### Protect your biggest asset...



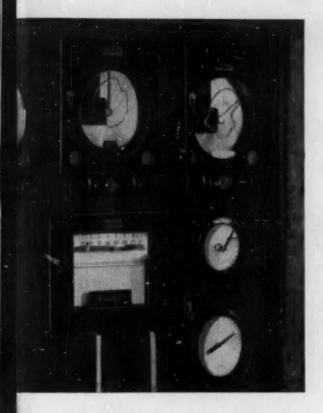
#### In the Beverage Industry

At the Bernheim Distilling Co., Louisville, Ky., Honeywell instrumentation regulates fermenting, distilling and aging of I. W. Harper bourbon whiskey. Control of temperature and other process variables must be extremely accurate to assure high product quality.



#### In Plastic Molding

Instrumentation cut rejects 38 percent in the manufacture of plastic key tips for business machines at The National Cash Register Co., Dayton, Ohio. Honeywell temperature controls on plastic molding presses have paid for themselves many times—in product quality, quantity and uniformity.



#### In the Paper Industry

Instrumentation increased pap yield 12 percent, cut cooking time 20 percent when Hongwell controls were added to sulfite digesters of Racqueta River Paper Co. In addition, quality has been stepped and maintained uniformly despite frequent changes in the waterials.

#### .. product quality...

#### with Honeywell instrumentation

PRESTIGE and profits go hand-in-hand with product quality. The way to keep quality standards consistently high is to put engineered instrumentation to work. Today's methods of process measurement and control also hold unit costs in line by reducing rejects and raising output.

If you're thinking about updating your present plant facilities, consider the many proved economies of instrumentation. Instrumentation is modernization. If you're planning a new plant, learn how instrumentation can minimize your expenditures for new equipment.

Honeywell, the world's largest manufacturer of automatic controls, will make instrumentation a paying proposition in your plant, whenever you're ready.

MINNEAPOLIS-HONEYWELL REGULATOR Co., Industrial Division, Wayne and Windrim Avenues, Philadelphia 44, Pa.—in Canada, Toronto, Ontario.

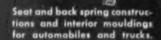


#### Honeywell BROWN INSTRUMENTS

First in Controls

L. A. YOUNG SPRING &

of service to industries



Precision mechanical springs, such as valve and brake springs, and wire forms of all kinds.

Daybrook Speedlift Power Gates. Various capacities and platform sizes for all makes of trucks and trailers.

The variety of LAYCO products today is the result of a well-planned program of expansion and diversification. A neverending program dedicated to serve the needs of those industries that are so essential to the progress of a dynamic, ever-growing America.

ever-growing America.

The spring & wire division of Layco has long served the automotive, aviation, bedding, furniture and refrigeration industries as a leading supplier of original parts and

seemblies.

Now, under its divisional banners, LAYCO is fast becoming a nation-wide name in the field of modern "outside materials handling" equipment.

Through the DAYBROOK and OTTAWA DIVISIONS, LAYCO serves thousands of businesses and industries wherever goods and materials are transported and handled by modern methods. Construction, public utilities, road-building and maintenance, motor transport, agriculture and mining are a

L.A. YOUNG SPRING & WIRE



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# MEAIRS

of growing America!

Daybrook Hydraulic Hoists and All-Steel Dump Bodies. Wide range of standard and special models.

Ottawa Front-End Loader and Hydra-hammer Pavement Breaker and Tamper, Backhoes and other attachments for all makes of industrial tractors.

Daybrook-Woodside Power Loader. Up to 4,000 lb. capecity. 360° turning radius. For all truck makes. Ottawa Tracto-Lift heavy duty lift trucks. Up to 15,000 lbs. 7½ to 25 ft. lift. High ground clearance.

few of the industries, using in ever-increasing quantities, products of the DAYBROOK and OTTAWA DIVISIONS.

With fifteen plants now serving the United States, Canada, Europe and Latin America, you may LOOK to LAYCO for newer and better things to come.

For full information on products, services and facilities, write L. A. Young Spring & Wire Corporation, 9200 Russell Street, Detroit 11, Michigan. Let LAYCO serve you.

CORPORATION



OTTAWA STEEL DIVISION



#### THE PACKAGING NEWSFRONT

A saving of more than \$17 per thousand packages is being made by rubber companies through the use of a special type of bag, developed by Bemis, for shipment of synthetic rubber to foreign countries.

High labor cost of packing synthetic rubber in bags brought an appeal to Bemis for a method that wouldreduce the handling operation. The old practice was to pack in two bags, thus doubling the labor. Also, the overslip bag was frequently loosely fitting, so that the inner bag carried the strain.

The successful solution was a single laminated bog, with an outer covering of burlap laminated with a colorless adhesive to a kraft paper inner ply. To keep the rubber from sticking to the bag and to permit easy removal, the paper was given a clay coating.



The new package saves over \$10.00 per thousand in package cost, as compared with the previous double bag combination. The elimination of one packing and one handling operation saves an estimated \$7.00 additional. Moreover, the Bemis laminated bag gives extra protection.

You can answer so many needs with Bemis products ... both in and out of the packaging field. If you need a package that will increase sales, give better protection to your product, or simply save you money . . . or if you are interested in other Bemis developments in paper, textiles or plastics... consult us. Bemis products meet an astounding number of industrial, commercial and recreational requirements, and new uses are continually coming to light. You may want our engineers to create a new package, or to advise you on packaging methods. Please write us.

Bemis BEMIS 400 D PI



the rounded record, as of Sept. '55, reported by manufacturers of motor vehicles and equipment on their quarterly tax reports to their respective state unemployment compensa-

agg	ciicics.	
	State	Employmen
1.	Michigan	450,000
2.	Ohio	80,000
3.	Indiana	74,000
4.	New York	45,000
5.	California	34,000

These figures are comparable in that each state uses the same system of industrial classification. But there are several products for which Ohio is a leading producer, and for which automobile manufacturers are primary consumers, yet the employment involved is not tabulated within the category of "motor vehicles and equipment." For example, the manufacture of tires and tubes (classified under "rubber products") employed 58,000 workers in Ohio in Sept. '55. Workers producing other products for automobiles, such as sheet steel, automobile stampings, batteries, spark plugs, windshield glass, rubber cushions and parts, automotive paints, textiles, and so on, are also in categories other than "motor vehicles and equipment." If figures on "automotive employment" could embrace such secondary groups, Ohio's total would undoubtedly jump much higher, relatively, than any of the states listed.

The basic point in your report, of course, is one that previously hadn't been generally noted-the exceptional interest of the "Big Three" automobile manufacturers in selecting Ohio for their new plant facilities. Needless to say, perhaps, these new plants will doubtless attract many additional producers of automobile parts and materials to Ohio.

WILLIAM PAPIER

DIRECTOR-DIVISION OF RESEARCH AND STATISTICS BUREAU OF UNEMPLOYMENT COMPENSATION COLUMBUS, OHIO

#### Rail Costs

In your article on Revolution on the Railroads [BW-Aug.4'56,p31] you say that "railroad economists are now struggling to discover what the actual passenger costs are" because "if railroads abandoned passenger trains altogether this deficit wouldn't disappear."

Would it not be clearer to say that they are trying to discover the incremental cost of running passenger trains? If the railroads had

# What happened

when fire struck these <u>two</u> dry cleaning plants?



**BUILDING TOTAL LOSS.** Fire occurred on a Sunday afternoon when a clothing rack with 2000 silk and nylon dresses ignited at this dry cleaning plant. Damage was estimated at \$150,000. No sprinklers.

FLAMES WERE EXTINGUISHED by the operation of one sprinkler head of the Grinnell Sprinkler System on duty at The Roya! Laundry and Dry Cleaning Company, Pasadena, Cal. The fire, cause unknown, originated in a hand cart containing barber cloths. Loss estimated at \$250.

Fire observes no 40-hour week, plays no favorites in business. It is forever roaring up elevator shafts or bursting from storage closets in somebody's factory, department store, or hotel. Then one day—a quiet Sunday, perhaps—the "other fellow" agonizingly is you.

Could you survive a disastrous fire? Can insurance fully reimburse you for the loss of buildings, inventory, records, trained personnel, valued customers . . . invaluable lives?

Grinnell Sprinklers stand ready day and night, year after year, to stop fire when it starts... during those first few moments when a *little* water will do what tons of water often cannot accomplish later on.

When you consider that the installation of a Grinnell Automatic Sprinkler System reduces fire insurance premiums from 50% to 90%, it becomes an investment that pays for itself within a few years, and then starts paying you substantial cash dividends.

We shall gladly survey your property and submit an estimate, without cost or obligation. Write or phone Grinnell Company, Inc., 265 West Exchange Street, Providence 1, Rhode Island.







### We Suggest You Consider The Qualifications of This Motor

Representative of the Lamb Electric Motors now in service driving many types of products, this motor:

First, was designed for the particular job to be done, assuring optimum product performance.

Second, was developed and manufactured by personnel having many years of experience in the small motor field.

Third, was custom manufactured on a volume basis.

For these and other reasons, use of a Lamb Electric Motor usually results in an improved product . . . and lower overall costs. May we demonstrate?

THE LAMB ELECTRIC COMPANY • KENT, OHIO
In Canada: Lamb Electric—Division of Sangamo Company Ltd.—Leaside, Ontario

Lamb Electric

SPECIAL APPLICATION MOTORS



never handled anything but freight and were considering going into the passenger haul business, they would first determine the incremental cost to them of the added operation.

There can be a wide margin between allocated costs and incremental costs. Accounting under the rules of the Interstate Commerce Commission presumably does not provide for allocation of costs on any incremental basis, but when conditions indicate the possibility of abandonment of one of several coordinated services, the incremental costs should be determined.

Where the convenience of passengers and the mode of living of large suburban communities are affected by changes in passenger haul business, abandonment should not be suggested until it can be shown that the revenue is less than the incremental costs of the service.

CARROLL H. SHAW

NEW YORK, N. Y.

#### Another Trade View

Dear Sir:

A letter such as that of Reader Beckner of Wennonah Cotton Mills [BW—Jul.21'56,p12—Crucial Turn for Trade] should not go unanswered.

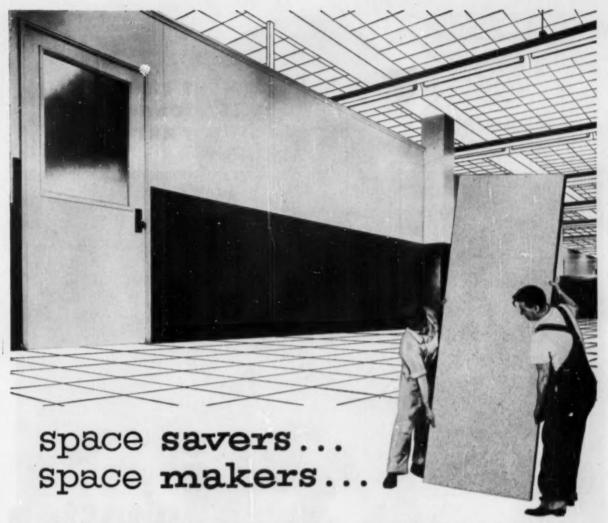
As a consumer and taxpayer I only wish I knew where I could buy those \$1 shirts tailored and produced by the Japanese! It would certainly boost my standard of living to purchase those rather than shirts of no better quality costing \$3 or more. It would also help me and my fellow-taxpayers not to have to pay the government to supervise the protective measures desired by Reader Beckner for his industry. Few of us would voluntarily donate to a fund to subsidize the textile industry and artificially hold shirt prices at a high level.

I agree that it is unfair for our mills to have to pay more for U. S. cotton than the Japanese do. However, that situation is due at least partly to the pressure of another minority group—the cotton farmers—exemplifying the same attitude, "that the government should protect me at the expense of everyone else." Let's protest support of cotton prices, rather than urge the government's support of manufactured goods prices.

WILLIAM D. HAWES

WILMETTE, ILL.

Letters should be addressed to Readers Report Editor, BUSINESS WEEK, 330 West 42nd Street, New York 36, N. Y.



J-M Class A Asbestos Walls are movable . . . save space and make space ... are noncombustible, moderately priced ... come in pleasing colors

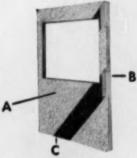
New Johns-Manville Class A Movable Walls offer you advantages never before combined in an asbestos movable wall. They are modestly priced. They are noncombustible. They have a textured, stipple finish in restful colors. They reduce maintenance and relocation costs to a new low.

The finish of Johns-Manville Class A Movable Walls is a tough, hard film much thicker than on the usual movable partition. It is mar- and scratch-resistant . . . rejects stain and soil . . . can be easily washed and even scrubbed, if necessary. If damaged, it can be touched up inexpensively to look like new . . . and, unlike other types of factory-finished partitions, can be repainted with ordinary paint.

#### Undivided responsibility for a complete job

These flush or glazed partitions are erected as well as furnished by the Johns-Manville Construction Department complete with doors, door hardware, glass and trim.

Johns-Manville Movable Walls are available in several types to meet varying budget considerations. For details, write Johns-Manville, Department BW, Box 158, New York 16, New York. In Canada, write 565 Lakeshore Road East, Port Credit, Ontario.



- Noncombustible asbestes coment surfaces
- Generous reinforcing for added strength
- Noncombustible ali-minral insulating core

See "MEET THE PRESS" on NBC-TV, sponsored on alternate Sundays by Johns-Manville



Johns-Manville

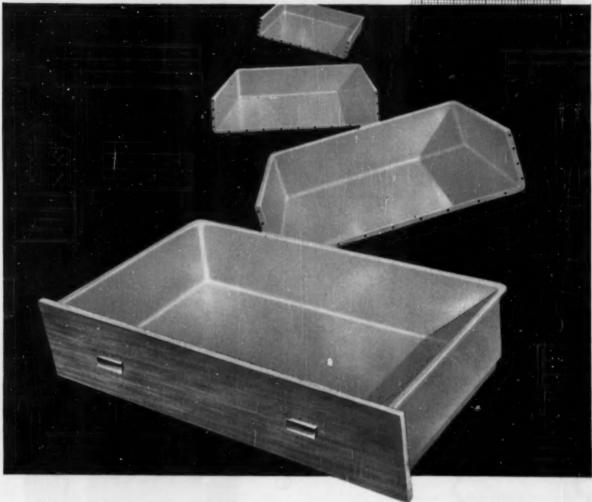


Q.

Could engineering in plastics molding make a significant contribution to the furniture field?

A. DRAWERS THAT COMBINE THE ADVANTAGES OF PLASTICS WITH THE WARMTH OF WOOD

Another example of CHEMICAL PROGRESS



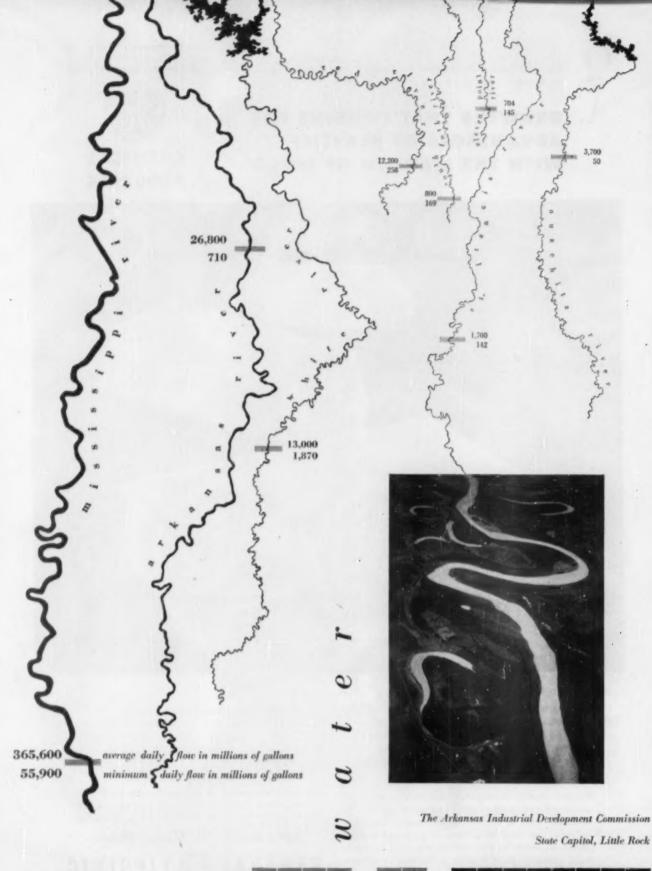
You've often dreamed of a drawer like this! A drawer that won't warp or stick . . . that's free from dust-collecting joints . . . that's light yet sturdy. Now it's a reality—with molded plastics drawers—developed, engineered and molded by General Electric's Plastics Department.

Molded plastics drawers are moisture-proof, nonwarping. Their seamless, jointless, round-cornered construction makes them far easier to clean. Molded in a variety of sizes and colors, they are produced as complete units, ready for the addition of facings to match wood grains or plain finishes, traditional or modern styles of furniture. These drawers are opening up new markets for plastics—in the furniture field . . . the home construction field . . . cabinet making . . . and the do-it-yourself fan who finds them ideal for creating arrangements of his own design.

For more information on plastics drawers by General Electric, write to Dept. PL, CHEMICAL AND METALLURGICAL DIVISION, General Electric Company, Decatur, 1ll.

Progress Is Our Most Important Product

GENERAL 🚳 ELECTRIC



THIS IS ARKANSAS



Emanuel Hochman, Vice-President and General Sales Manager, Bulova Watch Co., tells how:

#### "We put radios into the diamond business!"

"We've put Bulova Radios into 17,612 jewelry stores — and captured a large share of the radio business!

"But we couldn't have done it without Air Express!

"Parts come from 180 different suppliers via Air Express for assembly. Production schedules are always tight — Air Express gives us valuable leeway which we regularly need.

"In fact, we often make use of Air Express to deliver

finished radios to our retail outlets. And we never miss a date.

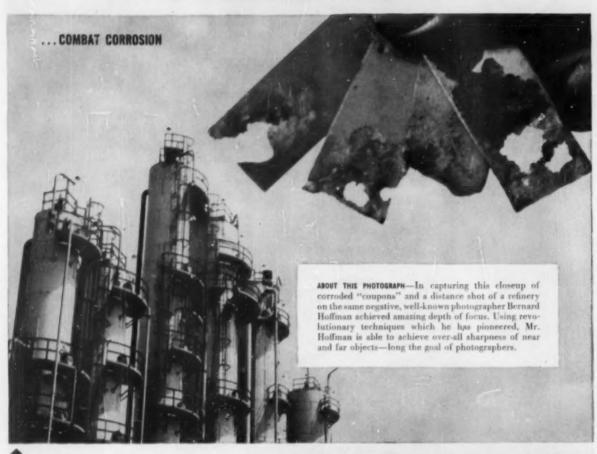
"Air Express took our new business 'off the ground' keeps us the fastest-growing radio company in America!

"Yet, most of our Air Express shipments cost less than with any other complete air service. 10 lbs., for instance, New York to Jacksonville, Florida, is \$4.42. It's the lowest-priced complete service by \$1.32!"



GETS THERE FIRST via U.S. Scheduled Airlines

# HOW HERCULES HELPS...



CORROSION COSTS MILLIONS every year for petroleum refiners. Metal losses as illustrated by these corroded coupons are the "danger signal" that corrosion is at work. Hercules Polyrad®, a corrosion inhibitor, prevents this damage. By forming a molecular film that protects the process side of refinery equipment from corrosive media, Polyrad drastically reduces "down time" for maintenance; cuts costly replacement bills.

able to withstand sterilizing, this plastic baby bottle was molded from Hercules Hi-fax\*, a new ethylene polymer. A completely new plastic, Hi-fax offers a combination of properties never before available, including four to five times the rigidity and twice the strength of conventional polyethylene. Hi-fax is now available for limited production runs.

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SYNTHETIC RESINS, CELLULOSE PRODUCTS, CHEMICAL COTTON, TERPENE CHEMICALS,
ROSIN AND ROSIN DERIVATIVES, CHLORINATED PRODUCTS, OXYCHEMICALS,
EXPLOSIVES, AND OTHER CHEMICAL PROCESSING MATERIALS.



#### **BUSINESS OUTLOOK**

BUSINESS WEEK SEPT. 8, 1956



Autos will shape the business curve more than anything else over the remainder of this year.

For all their tribulations, they haven't been much of a drag on the boom up to now, and they can give it a lift from here on.

**Production** of new cars in September, due to model changes, won't bulge any eyes. Even the final months of the year probably won't come up to 1955 (because Detroit presumably learned a bitter lesson out of what happened to dealer inventories last winter).

Even so, output for the year should reach or top 5,850,000.

The fourth quarter could easily go 1½-million (maybe even the 1.7-million the industry is talking about). That would be up from something like 1,150,000 in the third quarter.

How well cars sell, though, is more important in the last analysis than how many are built.

Presumably a lot of people have been waiting for 1957 models.

Should they be disappointed, we would feel it in all parts of the economy. But, if customers go for these cars, as seems most likely, then record retail sales for late 1956 are assured.

In fact, talk of shortages has some basis, relatively at least.

Actually, this will be one of those very rare years in which dealers' sales of new autos will exceed output by a fair margin (not counting either exports or unregistered sales).

Each month, starting with April, has seen more cars sold than were produced (and this will continue at least into October). Output through August was 1½-million behind 1955, registrations only half that.

Retail sales should come pretty close to 6.2-million. This will exceed output by perhaps 300,000.

With customers lifting 300,000 cars out of the auto industry's inventory—and almost as many more going abroad or into nonregistering uses—you can see what happens to dealers' stocks.

It is possible we will enter the new year with around 300,000 cars on hand; at the start of 1956, there were more than 800,000.

#### Implications for 1957 business can be seen in the auto figures:

If Detroit doesn't get too enthusiastic, and dealers enter the new year with, say, only 300,000 cars in the showrooms, the industry will have to strain to build up adequate stocks for spring.

Steel prospects, naturally, depend to no small extent on how the auto industry makes out.

The car manufacturers took more steel than they needed in the early months of 1956. But they pulled back in the second quarter; steel deliveries were cut by about the same percentage as auto output.

#### BUSINESS OUTLOOK (Continued)

BUSINESS WEEK SEPT. 8, 1956 For the six months, 18% less steel was bought than in 1955 while auto output was off 25%. Then, in July, an outturn of nearly 450,000 cars (while the steel strike was on) evened things up pretty well.

Auto manufacturers were able to chew up most of their steel inventory without any real worry for the future. Detroit's position as steel's best customer puts it in the A-1 bargaining position.

For example, the auto people bought 23% of all steel rolled in 1955. Even in this year's slack second quarter, they took 15%.

Selling automobiles will not be made any easier, of course, if the Federal Reserve persists in keeping money tight.

Naturally, borrowing on installments will cost more. But this you can count on: Neither the finance companies nor the auto makers will let credit block sales if they can help it.

Finance companies haven't had to turn down any prospective auto buyers so far for want of lendable cash (though they've been choosier). And they probably won't have to, any time soon.

But there are two problems to be faced on 1957 cars:

- Higher prices on the new models have to be fitted into the package. (Figure that the average down payment may be \$25 higher.)
- Higher interest has to be charged by the finance companies (to make up what they, in their turn, must pay for money).

Both down payments and monthly installments undoubtedly will average higher on cars next year. But consumer incomes will be up, too, while most of the people who bought 1955 models now have made 18 or 20 payments on the models they want to trade in.

Meanwhile, there's something we rarely think of: A lot of people buy on time even when they have the cash in the bank. If they find financing terms onerous, they'll plunk down the full amount.

Time payment debt continues to mount even though this has been a disappointing year for autos.

Installment paper doubtless will reach \$30-billion in December for the first time. The rise during 1956 will be about \$2¼-billion.

That's a sizable increase in the monthly lien on paychecks. But it's not much alongside 1955's bulge of \$5.4-billion.

Results in 1956 put a new wrinkle in what many observers are coming to think of as the auto industry's two-year cycle.

You're familiar with it on new cars: Sharp new models made excellent sales years of 1953 and 1955 (and, everyone hopes, 1957 also). The in-between or face-lift years have been turkeys.

Now look at used cars: When new cars sell well, this generates too many trade-ins. But, in the off years for new cars, used models are relatively scarce. Thus dealers this year have found that about the only place they could scrounge a profit was the used-car market.

#### For the first time, draftsmen can work in SEATED COMFORT

Boost drafting room morale with the new GF Draft.a. Matic.

Now . . . instead of standing, stooping, stretching, perching on the edge of a stool ... the draftsman can remain comfortably seated in an adjustable office chair while Draft-a-Matic's exclusive Roto-Positioner brings all parts of his drawing within easy working range. This increases efficiency by reducing fatigue, improves morale by providing greater working comfort.

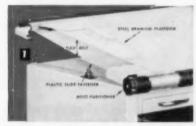
Increased productivity is just one of the reasons why engineering costs go down when you install Draft-a-Matic.

Find out for yourself the many reasons why Draft-a-Matic has made conventional drafting desks obsolete, and specifically what it can do for you. See it now at your local GF showroom - look in the Yellow Pages - or write for free 8-page Draft-a-Matic booklet. The General Fireproofing Company, Dept. B-68, Youngstown 1, Ohio.



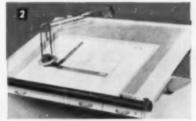
#### THESE FEATURES MAKE DRAFT-A-MATIC WORLD'S FINEST

- · All metal construction with baked-on finish. No warping
- Velvoleum covered drafting platform adjustable 0 to 85°.
  Height of entire unit adjustable from 31" to 39" at 1" intervals.
- Large center drawer with locking instrument tray
- Shelf and storage drawer arrangements to suit individual needs.
- Large sliding reference shelf for extra convenience.
   Designed for space-saving row installation.
- Accommodates parallel straight edge, drafting machine, lamp.
   Exclusive Flexi-Belt and Rote-Positioner delivers the work to the man.



1. Drawing is affixed to endless vinyl plastic belt. By merely turning Roto-Positioner wheel, draftsman moves drawing into working range while remaining comfortably seated.

2. Draft-a-Matic will accommodate drafting machine, parallel straight edge, lamps and



similar accessories. Drawing platform is covered with Mist Green Velvoleum

3. Row arrangement creates a complete work station in only 32 square feet. Immediately behind draftsmen are drawers and shelves for reference material and a handy sliding work shelf.



MODE-MAKER DESKS . GOODFORM ALUMINUM CHAIRS

GF metal business furniture is a GOOD investment

SUPER-FILER MECHANIZED FILING EQUIPMENT . GF ADJUSTABLE STEEL SHELVING





After more than a year of operation covering over 42,000 nautical miles, the U.S.S. Nautilus is still operating on its original charge of

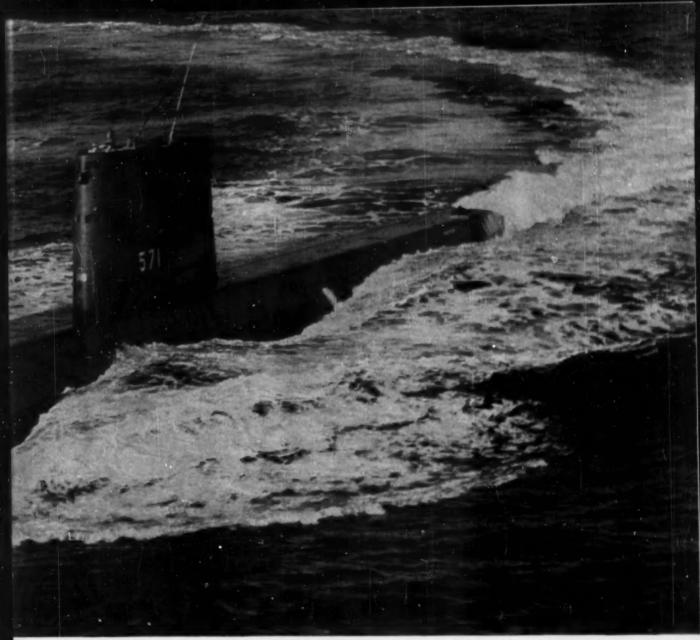
# OVER 42,000 MILES

No other ship has ever approached the performance of the first atomic submarine, Nautilus.

The reactor that drives the Nautilus was built by Westinghouse for the Atomic Energy Commission. Its performance has opened a great new era in ship propulsion. Westinghouse is now building reactors for additional submarines and developing atomic power plants for large surface vessels. These reactors will

power the world's first atomic fleet for your new Navy.

Westinghouse is building the first full-scale atomic reactor to produce electric power for public use . . . for the Atomic Energy Commission and Duquesne Light Company, at Shippingport, near Pittsburgh, Pennsylvania. We are developing an entirely different type of reactor to produce power for the Pennsylvania Power & Light Company. A third reactor for atomic-



atomic fuel. The atomic reactor which powers the Nautilus was built by Westinghouse for the Navy and the Atomic Energy Commission.

# REACTOR DRIVES NAUTILUS WITHOUT REFUELING

electric power generation is being designed for the Yankee Atomic Electric Company—a group of New England utilities. Our own atomic reactor, for test purposes, is under construction.

For more than seventy years, the products of

Westinghouse research and engineering have been making a great many things better in America's homes and industries. Those things will multiply as we move forward in the atomic era. You can be sure . . . if it's Westinghouse.

WATCH WESTINGHOUSE ... first in atomic power!



Through many years Kelsey-Hayes has worked closely with major aircraft engine builders. Today, with the addition of new plants, expanded research and engineering staffs, and augmented production facilities, assignments from the aviation industry are increasing rapidly.

Products include accessory gear assemblies, actuators, transmissions, power recovery units, radar tracking and scanning equipment, computers and controls. And for jets: compressor rotors, turbine sections, blades, buckets, vanes.

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Keisey-Hayes Wheel Co., Detroit 32, Mich. • Major Supplier to the Automotive, Aviation and Agricultural Industries

14 PLANTS f Detroit and Jackson, Michigan; McKeesport, Pa.; Los Angeles, Calif.; Windsor, Ontario, Canada • Davenport, Iowa (French & Hecht Farm Implement and Wheel Division) • Springfield, Ohio (SPECO Aviation, Electronics and Machine Tool Division)

Utica, New York—4 plants—(Utica Drop Forge and Tool Corporation, a subsidiary)

#### BUSINESS WEEK

SEPTEMBER 8, 1956 NUMBER 1410



With particular strength in apparel sales, retailers watching the customers find . . .

### They're Buying Their Heads Off

Some of the most contented men in the country today are retailers. Come elections or overseas crises, the consumer is continuing to spend his money merrily. So much so that store-keepers from coast to coast are blandly anticipating another record autumn and Christmas—and a new peak for annual sales.

With Labor Day—mid-point of the selling year—past, BUSINESS WEEK reporters interviewed storemen across the country. Here's the picture that emerges:

• The first seven months were comfortably ahead of 1955 for most city stores. At worst, individual stores report staying even with last year; the majority were up anywhere from 3% to 10%. Some rural areas, reflecting somewhat lower farm income this year,

say they're running a little behind, but there has been a pickup in the last six weeks.

 August, in most cases, hit the highest sales point since the scare-buying months immediately after the start of the Korean War.

 September is continuing to boom, sparked by better back-to-school sales than many had anticipated.

• Best to Come—With the biggest selling season still ahead for retail stores—roughly 45% of the year's business is done in the last four months—no problems are looming. Almost no one's worried about inventories, shortages, or even—somewhat surprisingly—credit to finance the peak retail season.

The general cuphoria has some solid underpinning. Employment is at a record high of 66.8-million, according to the latest Labor Dept. figures. And it's expected to rise over the next quarter, with auto companies recalling men and the seasonal impetus swelling the ranks of temporary workers. Personal income is still rising. Though sales of new cars and new houses have slipped sharply, some of the down-payment money that might have been for them is sliding across store counters instead.

No Dog Days—Certainly August results.

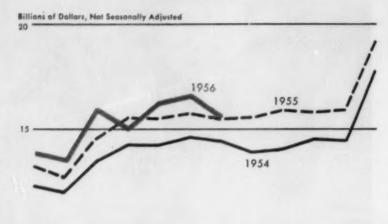
No Dog Days—Certainly August results support the optimism. Helped by comfortable weather in most areas—plus elimination of the usual midsummer polio scare—business was well above the average August.

The month is normally one of the slowest of the year. Summer-item business is finished, fall sales haven't started, vacations take a toll of both customers and store personnel. Yet Cleveland de-

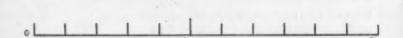


#### **Retail Sales**

Are comfortably ahead of last year



Retail Sales

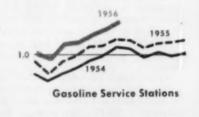


#### Note how these important



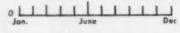
Billions of Dollars, Not Seasonally Adjusted

Data Dept. of Commerce.



Billions of Dollars, Not Seasonally Adjusted 1.5





partment stores one day last month had their best day's sales of the year-in fact, the best one-day volume ever, except for once in a Christmas season. Few cities have that spectacular a mark to point to, but almost all had sales increases. Even Detroit, with 82,000 unemployed during July and an estimated 170,000 out of work during August, reports sales "slightly better" than last summer's.

Making the merchants happiest—the higher volume has been largely in staple merchandise: back-to-school outfitting for the kids, home furnishings, adults' fall clothing. Volume has been only slightly dependent on "clearances." It's due more to the fact that fall clothing, for example, has been moving earlier, and better, than for several years.

• Kid Stuff—The biggest single impetus right now is the back-to-school business that in some areas reached all-time peaks for Labor Day sales. Part of that, of course, is the growth in school population. Some 41-million students are enrolled this year—1.7-million more than last year. And an Arizona retailer motes: "When Mama brings the kids in, she's buying them bigger outfits than she has for some time."

Style changes are helping. "Blue jeans are out," an Oklahoma retailer reports happily. "Even the kindergarten set are being outfitted with Ivy League trousers." Others see the same trend and add that new styles not only mean new outfits, but also more expensive ones than the youngsters have been wearing.

• Quality Reigns—The upgrading in

purchases is reported everywhere.
"Upstairs is doing much better than
the basement," says a New York merchant.

A Midwestern chain of furniture stores concedes that its unit sales are off but says: "That's because the lowend stuff, which sells entirely on installments is being cut by a crackdown on marginal borrowers. The high-priced styles and fabrics are doing better than ever—for cash on the line."

• Money Squeeze—Credit, it's widely agreed, is not a major problem. The chains, and the big individual stores, all indicate they have enough ready capital—or solid enough commitments on financing—for their short-term money to underwrite big Christmas inventories. Even smaller merchants say that, though they're having to pay more for money, they're getting it—their banks are taking care of them (BW—Sep.1'56,p69).

Few are upset about the higher cost of credit, which ranges anywhere from 1/2 to 1/2 of a per cent more than they paid last year. An Eastern storekeeper shrugs: "I don't like paying more, naturally. But right now most buyers aren't quibbling over a penny or two, and I probably won't have to absorb too much."

Charge account credit seems more liberal than ever—except for big-ticket items such as appliances. In those cases, individual credit ratings are getting a somewhat tougher going-over.

• Borrowing Ahead?—There are still crossed fingers, though. Some retailers wonder if some of the current rush is because consumers, hearing talk about more inflation, are trying to beat price rises. And most retailers continue to play it close on inventory.

"Why order too much ahead?" asks one merchant. "You want six of something, it's on its way before you put down the phone. It's no longer necessary to order maximum quantities months ahead."

The lowest forecast of Christmas

Billions of Dollars, Not Seasonally Adjusted

1.2

business this year is 3% ahead of 1955—other expectations range to 15% better. The phrase "the best Christmas ever" erops up frequently.

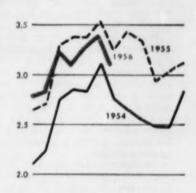
But the hope is tinged with caution. Only a handful of retailers indicate that they've already made their full Christmas commitments. Most feel they'd rather be a little understocked than take any chances on a big carryover if the boom should slip a trifle. Except for toys and other Christmas staples, most are holding off on major orders until close to Thanksgiving.

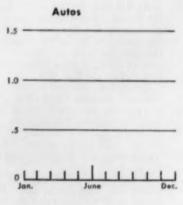
most are holding off on major orders until close to Thanksgiving.

• Hard or Soft—Though "practically everything" is selling now, merchants are wary of guessing which lines the holiday splurge will hit. Department stores have been gradually reverting to their traditional role of selling primarily softgoods. Although there are frequent reports that appliance business is firming up and is expected to improve still more, storekeepers almost universally note that softgoods, particularly clothing, have been moving up much faster in recent months. They expect that trend to continue.

"After almost 10 years of paying first for houses, cars, and appliances," says one, "the customers are putting some money on their backs again."

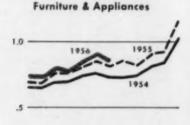
Billions of Dollars, Not Seasonally Adjusted 4.0

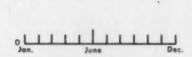




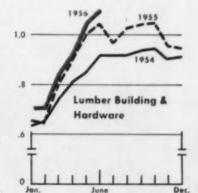
#### industries are selling







Data: Dept. of Commerce.





Britain's response to the Suez crisis means . . .

### Troops at Ready, Strain on the Pound

This week, as the diplomatic stage for the Suez conflict shifted to Cairo (page 163), there was grim financial news from London. The British Treasury announced that its gold and dollar reserves had dropped during August by \$129-million, wiping out almost half the gains made during the first seven months of the year.

Behind London's loss of gold lies speculative pressure on the pound arising out of the Suez affair as well as heavy seasonal buying in the dollar area. Many an international trader seems to have had his confidence in sterling shaken by the fear that Suez has stymied Chancellor of the Exchequer Harold Macmillan in what had been until recently a successful fight against inflation.

• Characteristic Gamble—This doesn't necessarily signal a new financial crisis in London. In fact, Washington experts feel that, barring actual fighting, the British will end up the year in fairly good shape. But there's no blinking the new strain on the British economy, or the risks the Eden government is running in trying to get a Suez settlement that Britain can live with.

When Eden decided to use force, if necessary, to bring Egypt's Pres. Nasser to terms, he was clearly taking one of those big gambles that mark the course of British history—the kind that has become really dangerous now that Britain's military and financial margins are so narrow.

If fighting actually starts at Suez, there's not much doubt that the waterway would be closed and the Middle East oil pipelines as well. That would set Britain back to the tune of well over \$500-million a year. Beyond that lies the possibility of a long, drawn-out fight against the Communist volunteer army that Moscow has threatened to throw in on the side of Egypt.

#### I. Already Bad Enough

The price that Britain is already paying is serious enough. Without the Suez crisis, the British economy would be well on its way to recovery from the inflationary pressures that hit it last year (BW-Apr.21'56,p26).

By midyear it was clear that the unhealthy domestic boom had slackened, that exports had revived and imports stabilized. Slackening demand for consumer durables, hit by Macmillan's credit squeeze, had brought cuts in output, layoffs of labor, and a shift of resources to Britain's overloaded capital goods industries. This provided greater capacity to meet export orders.

At the same time prices stabilized. (They haven't moved since May.) And, despite big talk by British union leaders, wage increases had slowed down.

 The Upset—Given these gains, it seemed at midyear that the seasonal, late-summer weakness of sterling could be expected to disappear by the fourth quarter. The over-all balance of payments, which showed a £100-million surplus in the first half-year, seemed certain to move even further into the black.

The Suez crisis threw two monkey wrenches into the works:

It forced the Eden government to tear up its plans for big cuts in defense spending. Late last spring the government had decided that, to get the British economy really on its feet and to keep it there, it would be necessary to make defense cuts. Plans were being drawn up to shift the balance of British military strength away from conventional forces needed for "police war" and to concentrate on a small army with high firepower. Now that's all hung up.

It frightened foreign traders, especially on the Continent, with the prospect that Macmillan would lose all his economic gains. This has shaken foreign confidence in sterling at the time of its seasonal weakness. It has exposed the familiar picture of Britain's tiny monetary reserves—barely enough for normal trade swings and dangerously inadequate for political emergencies.

 Shaken Faith—So far, the weakness of sterling reflects shaken confidence rather than any real change in the British financial position. But that could come when business feels the effect of requisitioning of ships, the drafting of skilled workers, and awarding of new defense contracts.

Looming up, too, is a big yearend debt repayment (\$185-million) to the U.S. and Canada. Fortunately, London will add almost that much (\$177-million) to its dollar reserves this month from the sale of the Trinidad Oil Co. And an early Suez settlement would certainly reduce the speculative pressure, perhaps even reverse it as international traders covered their present short

positions in sterling. But if the Suez crisis drags on there is a danger that London will end up the year with its gold reserves about where they were at the end of 1955.

#### II. For High Stakes

It's obvious that Prime Minister Eden wouldn't be taking the risks he is if he didn't feel that Britain has a tremendously high stake in the Suez Canal, in the Middle East as a whole, and in the area stretching across to India and Malaya. Although this is a complicated picture, you can break it down into three basic facts:

 The dependence of the British economy on free passage through Suez of Persian Gulf oil and a wide range of other commodities—such as wool, rubber, tea, jute—from the Far East.

 The importance of the Middle East region as a source of oil to supply Britain's growing energy needs and a source of profits for British oil interests.
 On top of that is the prospect that the area will become a profitable market.

 The need to block Moscow's bid to gain a dominant position in the entire underdeveloped area from Cairo to Singapore, including what the British regard as the main prize—India.

 Bad Bet—It's the third of these that is decisive with the Eden government. Britain gave up physical control over Sucz only this year of its own free will, though under some American pressure. Its economic dependence on Middle East oil plus trade was just as great then as it is now. What has changed the situation is the conviction in London that its gamble, and Washington's, on Nasser has miscarried.

Britain withdrew from the Suez on the assumption that Nasser would settle down and remain within the Western orbit. But Nasser promptly called in the Russians, launched a bid for Arab leadership, and organized a massive anti-Western propaganda campaign throughout the Middle East and North Africa.

When Nasser grabbed the Suez Canal, London decided that you can't gamble on dictators, that Nasser must either be stopped now or that the entire region would fall first under his control and then under Moscow's.

As London figures it, such a development would undermine whatever strength Western Europe still has, isolate the U.S., and decisively tip the balance of world power in Moscow's favor. That's the nightmare that has made Britain halt its steady postwar retreat from imperial positions and gather its dwindling strength for one more stand.

In short, what it won't give up without a fight is economic living room in any important area where it is abandoning political control.

#### Subsidy for Giant Tanker?

The U.S. government reportedly is thinking seriously about subsidizing construction of a fleet of giant oil tankers in American shippards if Egypt should close the Suez Canal to Western shipping. This is reported this week by Petroleum Week, a McGraw-Hill publication, which also says that the government might do some of this as "insurance" even if the Suez crisis is settled peacefully.

According to the story in Petroleum Week, the emergency plan calls for building tankers with deadweight tonnage between 84,000 and 100,000 tons. Tankers this size could move oil around Africa at a cost no greater than conventional tankers (about 20,000 tons) going through the Suez Canal.

Cost Differential—The huge tankers
would have to be built in U.S. shipyards because foreign yards capable of
constructing such large vessels have all
the orders they can handle right now.
And because it costs substantially more
to build a tanker in the U.S., some form
of subsidy or government encouragement would be needed to get shippers
to place orders in American yards now.

In the event of a canal shutdown, the PW article states, top priority might conceivably be given to the construction of as many as 100 of these "supersuper" tankers. Enthusiasts for the plan insist that the first tanker could be ready in as little as 10 months, with others following at two- or three-month intervals. Skeptics wonder where all the steel plate for such a crash program would come from and question whether there would be enough oil for 100 of the giant tankers to haul.

• Trend Already Set—But any such government program would merely amount to speeding up a trend toward larger oil tankers that already is well under way (BW—Aug.25'56,p79). An 84,500-ton tanker will be completed next month. There are 15 tankers of over 40,000 tons afloat—and none can use Suez Canal when fully loaded because of the 35-ft. draft limit. More than 70 tankers ranging from 40,000 tons up to 100,000 are on order or building.

• Economy—The reasons shippers are turning to bigger tankers are mainly economic. As tanker size increases, the construction cost per deadweight ton declines. And though tankers double in size, power requirements, fuel consumption, and crew needed to run them don't go up nearly that much.

#### Fuel Injection . . .

... engine for upcoming Corvettes—presumably available on Chevvies as well startles GM's competitors.

General Motors caused an upheaval last week in the engineering departments of its competitors as word leaked out that GM's Chevrolet Div. will offer a 1957 engine equipped with a form of fuel injection.

Fuel injection—avidly sought by stylists as well as engineers—eliminates the carburetor and air cleaner, permitting a lower hood, and gives better fuel consumption and higher power. Chevrolet will offer a 283-hp, semi-fuel injection engine for its Corvette. The same engine presumably will be available for installation in the 1957 Chevrolets.

• High Pressure—Direct fuel injection is the forcing of fuel under high pressure into the combustion chamber where it mixes with air and is ignited. Today's conventional engine uses a carburetor to mix fuel and air, and the mixture is piped to the combustion chamber (BW—Oct.22'55,p83).

Rochester Products Div. of General Motors, which developed the Chevrolet system, has been working on two types—direct fuel injection and a system in which fuel is injected into the intake port of the cylinder just ahead of the combustion chamber.

Because of this redesign advantage, Chevrelet is offering the modified form of fuel injection in its new Corvette engine. Its basic family car engine can be used with either carburetion or fuel injection. The standard Chevrolet engine will offer 245 hp. while a special "power pack" version will get up to 270 hp.—both with the same 283 cu. in. displacement as the Corvette. Competitive engineers are agog over the fact that the Corvette fuel injection engine will generate one horsepower per cubic inch of displacement.

• Competition—With the Rochester Products development, GM seems to have stolen a march on the rest of the industry. The Rochester system will also be used on the new Cadillac Eldorado Brougham and perhaps in racing kits for Oldsmobile and Pontiac. In contrast, Chrysler engineers say their company has no interest in fuel injection at this time.

One possibility for Ford is seen in a recent licensing deal between Holley Carburetor Co. and Joseph Lucas Industries of England (page 94). Studebaker-Packard also may offer a foreign-developed system if its foster parent, Curtiss-Wright Corp., concludes negotiations with Daimler-Benz.

WORLDWIDE IMPACT of modern synthetic dyes—a thriving industry that grew from accidental creation of mauve 100 years ago—features show at New York's Waldorf-Astoria.

### Synthetic

WHEN THE SYNTHETIC organic chemical industry marks its 100th anniversary at New York's Waldorf-Astoria Hotel next week, the displays these workmen are preparing will tell a story that begins and ends in a splash of color.

The exhibit, a noncommercial affair sponsored by manufacturers of organic colors, aims to demonstrate how modern synthetic dyes are helping to beautify "A More Colorful World" with a far-reaching impact on industry, the world of fashion, and the home.

The splash of color that started the industry on its career of embellishment was more limited in extent—in fact, it was something of an accident.

• Mauve Beginning—It happened just 100 years ago, in the mid-Nineteenth Century laboratory of the late William Henry Perkin—one of the great inventive researchers. What Perkin, who was only 17 at the time, was actually trying to do was to synthesize quinine.

But—as the history books all relate— Perkin noticed a dark mass forming during an experiment in which he was using aniline (a product of coal tar). When this dark mass was dissolved in alcohol, the result was a violet liquid, which would dve silk or wool.

What Perkin had done was to create the first synthetic dye-mauve. It took until December, 1857, however, before various kinks in Perkin's original manufacturing plans could be ironed out and actual commercial production of mauve could be started.

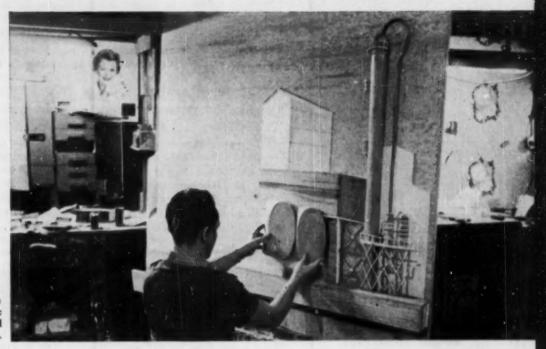
 Catalyst—But the discovery of mauve proved to be the catalyst that set the synthetic organic chemical industry into action. Use of color, of course, had started way back at the dawn of civilization—but until 1856, science had been content to synthesize materials occurring in nature, dyes derived from vegetables, flowers, trees. After Perkin, the aim became the synthesis of products that improve on nature.

Today's dyes are derived basically from one or another of five hydrocarbons. And the best-though not the only-source for these is still coal tar, which gave Perkin his start.

Everywhere—Today, the result is apparent in everything from dyes, drugs, solvents, plastics, film, fibers, to insecticides, fuels, and paints.

And mauve, which started it all, has spawned a large family. The art of making dyes to fill specific requirements is so advanced that chemists can literally build up dyestuff molecules having almost any required structure, and with the particular atomic groupings that are known to produce the properties desired.

## **Chemicals Show Their Colors**



Today, chemical plants can whip up almost any synthetic dye you'd want for any need —as this exhibit will denote.



But it's just the foundation-from dyes, synthetic organic chemicals spread into drugs, plastics, fibers, fuels-as on this base will rise . . .



Colorful globe settings to display the many materials and products, growing out of dye research, that touch almost all phases of life today.

#### Campaigning . . . Democratic Style . . . Republican Style

#### Old-fashioned BARNSTORMING still plays a role

- \*Party leaders call it "the greatest grassroots campaign in history"
- \*Stevenson and Kefauver will split up to criss-cross the country by plane and motorcade
- \*Stevenson will also use campaign trains occasionally for whistle-stopping in populous areas
- \*In selected spots, Congressional barnstormers—such as Sen. Kerr of Oklahoma and Sen. Humphrey of Minnesota—will pitch in. But ex-Pres. Truman will have a limited role
- \*Some of Eisenhower's major policy speeches will originate from picked spots around the country, as well as from Washington
- \*Nixon will cross-cross the country by plane
- \*Other airborne barnstormers will include Cabinet people—such as Benson (Agriculture), Seaton (Interior), Mitchell (Labor) —and Congressional leaders like Sen. Knowland, Sen. Bridges, and Rep. Halleck, House leader

# But TELEVISION carries more weight than ever

- "Budget of around \$24-million will go for eight half-hour network shows, about 90 fiveminute spots in prime evening hours, and other mentions
- "Party is spending "several hundred thousand dollars" on short spot announcements in critical states
- \*Budget is expected to go well past \$2½-million, with 15 halfhours scheduled for networks and 35 five-minute segments at the end of such audience-pullers as Person to Person, Jackie Gleason, Perry Como, Lawrence Welk
- \*A closing blitz of spot announcements is planned to blanket populous areas, as the GOP did it in 1952

## TV Still Isn't Everything

Some political theorists, greatly impressed by the rise of television, have forecast electronic campaigns for the future—national vote-getting contests in which the candidates will make their pitches from easy chairs before TV cameras.

Some of the same theorists had figured that this year's campaign would represent a big step i, that direction, now that something like 70% of all U.S. families are within reach of network television.

But this week came evidence from all sides that the theorists were wrong—at least about 1956. Actually, television becomes a less important campaign weapon this year than the old basic technique of going out to woo the voters in person (table).

• TV, To Be Sure—The politicians

• TV, To Be Sure—The politicians aren't downgrading TV. Both parties will use it heavily. In fact, Democrats count on TV to help them out of a

financial jam; they will use closed-circuit television (probably on Oct. 21) to link a series of fund-raising rallies across the country, similar to the Republicans' highly successful "Salute to Eisenhower" last January.

All told, Republicans and Democrats probably will spend as much as or more than the estimated \$6-million they laid out for TV and radio time in 1952—although their current budget figures, subject to expansion as they go along, indicate something under \$5-million.

What's happening, though, is this: It is simply that, in the clutch, the professional politicians have decided again that there is no substitute for a speech to farmers about farm problems at the county fair grounds, to workers about labor problems at the plant gate, to Southerners in the South, to Northerners in the North, to Westerners in the West.

The force of this conviction is re-

flected by Eisenhower's plan, announced at midweek, to go to Newton, Iowa, on Sept. 21, to spend the day talking with friends at the National Plowing Contest. This is grassroots campaigning in the classical pattern: Eisenhower says that he will not make a major policy address there, but Newton is in the heart of the farm belt where Republicans admittedly are nervous.

Grassroots—Democrats will concentrate their efforts particularly in 14 states that Eisenhower took by fairly narrow margins in 1952—Pennsylvania, Florida, Texas, Illinois, Massachusetts, Missouri, Washington, Minnesota, Tennessee, Oklahoma, New Mexico, Maryland, Delaware, and Rhode Island.

The Democrats are already off and running in "the greatest grass-roots campaign in history;" the Republicans have less-publicized plans for a tremendous bush-beating campaign that will

feature Vice Pres. Richard M. Nixon, the Eisenhower Cabinet, and-party strategists hope-Pres. Eight-ower himself.

It has to be a hurry-up campaign. There are only seven weeks left between next week's formal openings and the Nov. 6 election. This year's technique will be to talk to the folks, shake their hands if possible, and fly away to the next engagement.

Opening Shots—Of course, both parties have opened their campaigns—unof-

ficially.

Nevertheless, the coming week brings what both parties persist in calling the

formal openings:

 For Republicans, Wednesday afternoon at the Eisenhower farm at Gettysburg, Pa., with an open house and a speech by the President to upwards of 400 invited campaign workers from all 48 states.

 For Democrats, Thursday night in the farm show building at Harrisburg, Pa., where Stevenson addresses a \$50-a-plate dinner and a three-network

national TV audience.

After Harrisburg, Stevenson and Kefauver will go campaigning in separate directions. Kefauver's immediate destination will be Florida, for two days of talking and hand-shaking in Republican strongholds that tipped the state into the Eisenhower column in 1952.

At about the same time that Kefauver heads for Florida, Nixon plans to hop aboard a chartered airliner for the first of his many campaign jaunts—this one a two-week tour that, GOP sources say, will put him in virtually every geographic section of the nation, just as

a starter.

• Barnstorning by Air—Most of the "running," it seems, will be done by air. Stevenson and Kefauver have already showed why: In a hectic five days of conferences last week, they covered three-fourths of the nation by chartered airliner to talk with more than 1,000 party leaders representing 34 states.

Clayton Fritchey, Stevenson's new press secretary, says the trip proved the advantages of barnstorming, aside from whatever good it did the party organization. "Look what happened," says Fritchey. "We dominated the press for a solid week, and we did it without making speeches. We did it by moving being places, causing things to happon."

• Trains, Too-Most of Stevenson's

• Trains, Too—Most of Stevenson's campaigning will be done by plane, but Fritchey says he will use a campaign train in some areas. Another Democratic tactician says: "We don't have time to waste traveling two days over nothing but sagebrush or prairie, but a train might be put to work in populous New England or, say, the valley of Southern California where the towns run together. Mostly we'll use the airplane, though—with motorcades peeling off from air-

ports to carry our candidates into the principal cities and towns of an area."

Republican spokesmen say there are "no present plans whatever" for a GOP campaign train, but the Republicans will take to the air in a big way. Sometimes, a Republican spokesman says, "We'll probably have as many as six to eight airplanes under charter at once" to carry major speakers from region to region.

• Most in Demand—Nixon, of course, will do the most traveling. He is scheduled to criss-cross the country several times for a voice-taxing schedule of speeches. Secy. of State John Foster Dulles will stay out—in what a party source calls "an attempt to keep foreign policy above partisan debate"—but all of the other Cabinet members will be on call.

GOP headquarters expects heaviest calls for Agriculture Secy. Ezra T. Benson from the farm belt and his native West; Interior Secy. Fred A. Scaton, from his homegrounds in the Midwest and the power-conscious Northwest, and Labor Secy. James P. Mitchell, from the industrial centers of the North and East.

Republican strategy calls for speeches from such Congressional party leaders as William F. Knowland and Styles Bridges of the Senate and Joseph W. Martin and Charles Halleck of the

• The Standard-Bearer—Pres. Eisenhower's personal travel, which probably will be considerable before the campaign ends, will be done in his personal Air Force plane, the Columbine. (The Republican National Committee reimburses the Air Force for operational costs whenever the plane is put to political use.)

A few weeks back, Eisenhower was portrayed as determined to keep himself above the din of the campaign except for six or seven major policy speeches on television. Now, he is willing—even eager—to do more. Already, he has agreed to travel in connection with some of his major TV speeches—originating them from hotly-contested regions or states where his personal appearance would boost both national and Congressional tickets.

 Video Campaign—No one in either Republican or Democratic headquarters is precisely certain yet about what use will be made of the television time that

is under contract.

As of midweek, the Democrats were even being secretive about their network time layout. They say they have "six or eight" half-hours of network time, plus about 90 "five-minute participating segments"—to run at the end of regularly scheduled network shows shaved down to accommodate the political "riders."

Republicans, who started their TV

time-buying in June, 1955, have blocked out 15 half-hour network commitments in the prime evening hours. These begin on Sept. 19—the first takes over the time usually occupied by I've God a Secret (CBS)—and build up to a peak of three each week during the last half of October, all in the most-favored evening hours and with all three networks represented. At various times, the Republicans will take over time slots normally occupied by such programs as Red Skelton (CBS), Burns and Allen (CBS), Dragnet (NBC), and Wyatt Earp (ABC).

• Quickies—As with their longer TV performances, Republicans will concentrate their five-minute participating segments most heavily in the latter stages of the campaign. They will tag these on proved Saturday night audience-pullers such as Perry Como (NBC), Jackie Gleason (CBS), and Lawrence Welk (ABC) and on such midweek staples as Person to Person (CBS).

These five minute segments represent possibly the foremost stride by TV in adapting itself to political needs. Democrats say they are the brainchild of J. Leonard Reinsch, a radio-TV industry executive and a Democratic Party adviser. A Republican committee official calls them "the greatest innovation in TV use," pointing out that they "deliver" an audience without risking offense to viewers by entirely blotting out a favorite program.

ting out a favorite program.

• Budgets—In 1952, spending estimates on TV and radio combined (with the vast majority of it going for TV) ran to about \$3.5-million for Republicans, about \$2.5-million for Democrats. Now they're talking in terms of about \$2.25-million each—with the Republicans expecting to spend more and the Democrats professing fear that a money pinch might cause them to spend less.

It seems a good bet that both will spend more than they are talking this week, and the industry will be surprised if 1952 figures aren't topped.

• Results Count—In a way, however, television is on trial. In 1948, only 48.8-unillion Americans voted in the Presidential election; in 1952, the turnout was 61.5-million, or 26% more. TV has claimed most of the credit, since 1952's was the first national election in which the infant medium took a big role.

Politicians always run scared, and they're always looking for new aids, but they don't entirely buy TV's claims of dominance. If 1956 produces another big jump in Election Day turnout, they might have some second thoughts on the subject. But as practitioners of an imprecise art, many politicians would probably still insist that the result came, after all, from intense barnstorming as much as from intense television cover-



AVERY C. ADAMS (right), who is taking over as Jones & Laughlin's new president, confers with Chmn. Ben Moreell.

#### Topnotch Salesman for J&L

After a decade of physical and financial reconstruction, Jones & Laughlin Steel Corp. turned its serious attention this week to the commercial end of the business. It did this by hiring Avery C.

Adams as president.

Adams, who had been president and chief executive officer of Pittsburgh Steel Co. since early 1950, succeeds C. L. Austin as president of the industry's fourth largest producer, J&L, on Oct. 1. Austin, president since January, 1952, becomes vice chairman and chairman of J&L's new finance committee. Adm. Ben Moreell remains as chairman and chief executive officer of J&L. At Pittsburgh Steel, Adams was succeeded this week by Allison R. Maxwell, Jr., a young sales executive who has spent almost half his life with Pittsburgh Steel.

· A Job Completed-For J&L, Adams' accession marks quite plainly the completion of a job that has extended for almost a decade. In that period, the company's principal energies have been devoted to a thorough rebuilding and expansion of physical plant. In the decade ended last year, it spent \$521-million for this purpose-almost twice its total assets when the reconstruction began. And scheduled for investment in plant and products through this year and next is another \$230-million. That job-both the raising of the money and the spending of it-has been the responsibility of Austin and Moreell. Adams' overriding assignment will be to sell the products that can be turned out by the modernized, expanded, diversified plant that Moreell built and Austin financed.

All that is an oversimplification, of course. For Moreell has done numerous things at J&L besides the physical rebuilding and expansion of its property. Likewise, Adams—who is known best in

the steel business as a salesman—has accomplished far more than that, notably in his almost-complete rebuilding of Pittsburgh Steel. And Austin, whose background has been almost completely financial, headed J&L when many important non-financial moves were made.

• New Goal—Even so, it's clear that J&L's directors had their eyes on an aggressive commercial performance when they elected Adams last week. The physical job was very well in hand and the financial problems had been brought under tight control. At the top levels of the steel business, selling is about all that's left when you've got both your plant and your balance sheet in order. And it has been years since J&L had a commercial man at the top.

J&L will have considerable to sell, too. It has added about 1.3-million ingot tons of capacity since Moreell took over the company early in 1947, is adding another 700,000 ingot tons now at its Aliquippa and Cleveland works. It also is thinking hard about the addition of another 1-million tons of ingots at a wholly new mill near Houston. Like the entire industry, J&L has been expanding its ingot capacity steadily for a decade.

Product Expansion—Even more striking at J&L, though, is the expansion of its product line. It has added or is adding half a dozen new products, hopes to add at least one more by entering the stainless business. And it has expanded or is expanding significantly its capacity for making half a dozen products it has been producing for years. On top of this, for several years J&L has been expanding its warehousing operations rather markedly.

When you look at this kind of prod-

uct expansion and diversification, it's easy to see why J&L went out of its way to acquire a salesman of Adams' standing

• Wide Experience-Adams began his steel career 37 years ago in the open hearth department of Trumbull Steel Co., Warren, Ohio. He became manager of tinplate sales for Republic Steel when it acquired Trumbull. Thereafter, he spent six years outside the steel industry, and returned to become manager of sheet sales for Carnegie-Illinois Steel Corp. Then came a year and one-half as vice president of Inland Steel, after which Adams became sales vice president of U.S. Steel Corp. of Delaware, which was about as big a sales job as the steel industry offered. After four years in the warehouse and export business after the war, he served with both Portsmouth and Detroit Steel before taking over at Pittsburgh Steel in March, 1950. Pittsburgh Steel's modernization and growth-both in plant and in product-has been about as spectacular as anything the steel industry has seen, postwar.

Austin's assignment as chairman of

Austin's assignment as chairman of J&L's new finance committee will be no part of an honorary job. Its membership includes, as well as Moreell and Adams, Frank Denton, vice chairman of the Mellon National Bank & Trust Co; F. S. Gaer, chairman of the executive committee of Bankers Trust; and A. J. Hettinger, Jr., a partner in Lazard

Freres.

And while J&L's balance sheet is in excellent shape now, financing will become a major problem again for J&L if and when it decides to build the \$250-million to \$350-million wholly new mill at Houston, for which it has asked the government to grant a certificate of accelerated amortization.

• Wave of Successions—The changes for Adams and for Maxwell of Pittsburgh Steel marked the third and fourth new presidencies in the basic steel industry since the end of this summer's strike. Previously, R. L. Gray succeeded W. W. Sebald as president of Armco, and Tom Patton took over from C. M. White as president of Republic. Sebald became vice chairman of Armco and chairman of its executive committee. White became chairman of Republic, succeeding Tom Girdler, one of the company's founders.

At Pittsburgh Steel, the post of chairman was filled for the first time in several years by the election of H. B. Collamore. A director of Pittsburgh since 1936, Collamore was president and chairman of the National Fire Insurance Co. of Hartford until he retired last month. Pittsburgh Steel elected E. M. Barber, formerly executive vice president, as vice chairman. Maxwell will be chief executive officer

as well as president.

### Who's hitting whose head?

YOU remember the story: boy hitting himself on the head with a hammer. "For goodness sake, why?" "It feels so good when I stop."

When workers demand a raise (without a corresponding increase in production to earn it), they are hitting themselves, for they are the owners, through their life insurance policies, bank accounts, pension funds—they own America.

If they would only see that they're hurting themselves most of all—if they would only earn their increase by more efficient production—then their insurance, savings, pensions, all would be healthier, safer.

But if workmen do not earn their higher wages by increasing their efficient production, they are increasing costs of what they make, which can only mean higher prices which they themselves must pay... Why punish yourself?



# Commodity Credit Corp. Unloads Its Farm Surpluses

Percent of U. S. Annual Consumption on Hand

	Aug. 1953	Aug. 1954	Aug. 1955	Aug. 1956
COTTON	2%	15%	54%	31 %
BUTTER	17	30	12	1
CHEESE	17	31	20	16
DRIED MILK	27	18	10	8
WHEAT	43	80	98	92
CORN	7	11	19	23
RICE	NONE	6	43	70

## A Mountain Starts to Melt

The table above reflects a faint glimmer of light that the Agriculture Dept. has glimpsed at the end of the long dark tunnel of farm surpluses.

From the start, the Eisenhower Administration has found these steadily mounting agricultural stocks a heavy embarrassment. At home, they have depressed farm prices, and so complicated the problem of keeping farm income at equitable levels. Abroad, they have created fears that the U.S. would resort to dumping and have forced us to curb imports and to subsidize farm exports.

• Still Huge-Even now, with hope beginning to rise, surpluses in government hands are worth \$5-billion, while the taxpayer is spending \$1-million a day just to store them. But relief is

seen in these points:

 The government's surplus disposal program—notably the effort to dispose of stocks abroad—is in high gear.

• The over-all rate of accumulation has leveled off in the past year; stocks of some commodities have been brought down sharply. Although total value of government stocks had jumped from \$3.6-billion in June, 1954, to \$4.7-billion in June, 1955, it rose only \$400-million in fiscal 1956.

If the soil bank and the conservation reserve plans rein in production of key crops as effectively as their supporters hope, the expected rate of surplus disposal should begin to make

a real dent by fiscal 1958.

The table shows how surplus accumulation is leveling off. In terms of percentage of annual needs and number of days' supply in government stocks—a more meaningful measure of the problem than dollar values—corn and rice are the only commodities of which stocks have increased in the past year. And even corn stocks still are relatively low in terms of annual need, while the

rice stockpile will be drawn down by 20% to 25% as a result of the recent agreement to sell India \$652.3-million (book value) worth of surpluses. On the positive side, the huge stocks of dairy products—especially butter—are down to manageable size.

Next Year—Officials don't expect surpluses to dwindle much in the coming year despite stepped-up disposal operations. Latest estimates indicate that stocks of wheat, cotton, peanuts, and tobacco will go down very slightly and stocks of rice and corn will rise by trifling amounts. But at the worst it does look as though surplus accumula-

tion has reached a plateau.

Looking ahead to the end of fiscal 1958, after the first full year of soil bank operations, officials believe that there will be a substantial drop in stocks. If the soil bank works as expected, stocks of the two most troublesome commodities, wheat and cotton, should drop by as much as 250-million bu. and 1.5-million bales respectively.

Massive Effort—Behind the dwindling rate of accumulation and hopes of actually biting into stocks lies a massive disposal program. The government has sold or given away over \$6.2-billion worth of farm surpluses in the last four years—nearly \$5-billion of it in the past two years.

The great bulk of these surpluses have been disposed of abroad under the overseas surplus disposal program initiated in mid-1954 with the passage of

Public Law 480.

Under PL 480, surpluses may be sold abroad for foreign currencies—which may then be lent back to the purchasing governments to be used for economic development or other purposes. Or surpluses may be given away as famine relief or may be bartered for strategic commodities.

Surpluses valued at \$2.2-billion by

the Commodity Credit Corp. have been sold overseas for foreign currencies, \$899-million worth have been given away for famine relief or other charitable purposes, and \$587-million worth have been bartered for strategic commodities. That adds up to \$3.6-billion. In return, the U.S. has received about \$1.4-billion in foreign currencies and strategic commodities worth about half a billion dollars.

• Slow Start—The overseas disposal program got off to a slow start two years ago amid sour predictions from many agricultural marketing experts that it never would succeed in moving substantial amounts of surpluses or that if it did it would be at the price of embittering relations with other agricultural exporting nations and maybe even setting off ruinous trade wars.

As of now the pessimists have been largely confounded on all points. The pace of the program has picked up steadily. This year alone nearly \$2-billion worth of surpluses have been disposed of abroad. Other big deals are in the works, notably one to sell over \$100-million worth to the Brazilians for cruzeiros. It looks as though a total of some \$4.5-billion will have been moved to more than 30 countries by the end of the fiscal year.

True, charges of dumping have been hurled at the program by foreign governments. Technically, the disposal program really is a sort of dumping operation in that sales are made for less than domestic prices. But the law specifics that sales should not disrupt normal marketing, and the Administration has tried to carry out this specification.

· Aid Aspect-One thing that has moderated foreign criticism is that commodity sales have generated substantial financing for new development abroad. Theoretically this in turn should generate additional consumption and therefore a larger over-all farm marketparticularly in underdeveloped countries whose nutritional standards are so low that almost any new economic activity forces up food consumption (BW -Aug.25'56,p.113). So far, under the program, almost 50% of the foreign currencies received for surplus sales has been lent back to the purchasing country to finance development. Quite aside from the economics of this operation, it has generated widespread international support for the program in underdeveloped countries that are short of capital. Brazil, for example, grumbles about surplus cotton sales but is anxious to buy wheat for cruzeiros that are lent back on liberal terms for economic development projects.

There is no doubt that the disposal program has had an impact on U.S. farm exports. At \$3.5-billion in fiscal 1956, these were up 10% in value and 13% in volume over the preceding year.

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No matter where you use protective coverings in your business—from building-material covers to truck tarps—you'll get more dependable, more economical service from covers of coated nylon.

Coated nylon covers are waterproof—not just water-repellent—and flexible, even in sub-zero temperatures. They effectively resist rot and mildew damage, too.

Coated nylon covers are tough and rugged, last two to three times longer than the ordinary kind. They are lightweight, easy to handle and easy to repair. For maximum protection and service with minimum maintenance, use covers of coated nylon.

Find out how this versatile new fabric can save you money. Ask your regular fabricator or fabric supplier for complete information, or write: E. I. du Pont de Nemours & Co. (Inc.)(BW-9), 2494 Nemours Building, Wilmington 98, Delaware.

#### ADVANTAGES OF COATED NYLON COVERS:

- Waterproof
- . Longer-lasting
- Lighter-weight
- · Resistant to rot and mildew
- · Easier-handling
- . Easier to repair

COATED COVERS OF DU PONT NYLON (



Du Pont makes fibers, not the fabrics or covers shown here,

BETTER THINGS FOR BETTER LIVING

# In Business

#### Prices in Far-Flung Sectors Join the Upward March

More price increases were posted this week, continuing the upswing set in motion by higher wage patterns and boosts in basic steel (BW-Sep.1'56,p25).

The rises—on products ranging from soda ash to typewriters—ran from 2% to 12%, affecting both industrial and consumer goods.

International Harvester lifted prices on trucks by 5%-6%, on construction equipment by 1.7%-6%. Thew Shovel Co. also boosted prices, blaming costs of labor and materials.

Other increases: Sylvania Electric added \$10 to list prices on four black-and-white TV models, but held the line on color and on fast-selling portable sets. Sperry Rand, Underwood, and Smith-Corona boosted some typewriters 5%-12% to match earlier increases by Royal McBee.

Among the basic materials, soda ash was raised 10¢ per 100 lb. by Allied Chemical & Dye, while Beryllium Corp. added 5¢ a lb. to beryllium copper alloy.

The Federal Reserve Board, which is continuing its tight money policy as a check on inflation, took official notice of the price upswing in its August Bulletin.

#### Other Economic Indicators

The Commerce Dept. reports that manufacturers' sales for July, seasonably adjusted, were \$26.1-billion, a drop of \$1.6-billion from June. The strike-induced lack of steel sales accounted for a huge hunk of the drop.

"Seasonal factors" got most of the blame from Agriculture Secy. Ezra T. Benson for a 3% drop in farm prices from mid-July to mid-August. . . . The Agriculture Dept. also reported that both assets and debts of farmers rose to record highs last year. Rising real estate values accounted for most of the 2% climb in assets, to \$170.1-billion. Debts rose \$1.1-billion, to reach \$18.8-billion.

#### Boost in Rail Demurrage Charges Sidetracked by ICC after Protests

The Interstate Commerce Commission has turned down for the time being the railroad's plea for boosts of up to \$4 a day in demurrage charges—the penalty that shippers pay for failure to unload freight cars within a specified time (BW—Sep.1'56,p38). The roads had scheduled the new rates to go into effect Sept. 1, but ICC suspended them until next Mar. 31. Hearings have been set for Oct. 15.

The ICC acted after 400 shippers bombarded it with protests. The shippers told the agency that the increase in demurrage fees amounted to a punitive charge by the railroads in a move to speed up the turn-around of freight

cars. The shippers said that, in practice, delays in moving cars were more often than not the fault of the railroads.

A plan to acquire majority stock control of the bankrupt Lackawanna & Wyoming Valley RR has been filed in federal court by the Delaware, Lackawanna & Western. The 19-mile L&WV links Scranton and Wilkes-Barre.

# Corporations Continue to Fatten On New Capacity and Mergers

Companies in various fields continue to press plans for growth, both physical and corporate:

Physical expansions: Two 200,000-kw. steam generators, to cost \$75-million, will be installed by Niagara Mohawk Power Corp. . . . Work will start soon on a \$58-million power plant near Terre Haute for Indiana & Michigan Electric Co.,—wholly owned subsidiary of American Gas & Electric. . . . Acme Steel Co. will build a \$15-million plant in the Chicago area.

Merger plans: A federal judge in San Francisco has lifted the temporary restraining order blocking the merger of Hazel-Atlas Glass Co. into Continental Can (BW—Aug.11'56,p111). The Justice Dept. opposes the merger. . . . Stockholder consent is being sought for the sale of the assets of Dragon Cement Co. to Ameirean-Marietta Co. . . . With one voice plaintively dissenting, stockholders of Trinidad Oil Co. have approved the sale of their company for \$176-million to the Texas Co.—(BW—Jun.16'56,p25). . . . Disagreements over financing have ended the talks of a merger of Catalin Corp. of America with Reichhold Chemicals, Inc. (BW—Apr.7'56,p34).

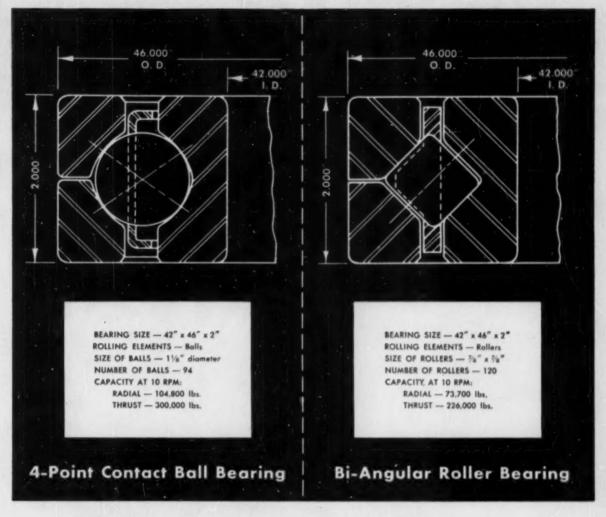
#### **Business Briefs**

The Studebaker goal for 1957 is to sell 103,000 cars, or 1.58% of a total market of 6.5-million, says Pres. Harold Churchill. He adds that the company can make money at this level, though the market penetration would be no greater than in the first four months of 1956.

Further hearings have been set for Sept. 18 on the federal court injunction granted this week restraining Hess Bros. Dept. Store, Allentown, Pa., from selling General Electric products below "fair trade" prices (BW—Sep. 1'56,p63).

Northeast Airlines is said to be casting speculative eyes on the Bristol Britannia turboprop plane. Northeast is about to become the third carrier on the rich New England-New York to Miami run, and it is felt in the trade that it will need faster and more modern planes than it now has in stock or on order to compete with National Airlines and Eastern Air Lines.

The American Gas Assn. says proudly that gas is now in first place as the fuel for centrally heated homes. AGA claims that 10.2-million homes now heat with gas, compared with 10.1-million using oil and 7.5-million using coal.



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Kaydon's unbiased recommendations result from years of bearing design, application and manufacturing experience with all types of ball and roller bearings up to 124" in diameter. So, why not contact Kaydon first?

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#### **JENKINS Fig. 106-A**

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## WASHINGTON OUTLOOK

WASHINGTON BUREAU SEPT. 8, 1956



The Eisenhower camp is starting to take the opposition more seriously.

Campaign plans are getting bigger and rougher; the President is taking on more and more of the job of keeping the GOP flag over the White House and winning a Republican House and Senate majority. You see this everytime the White House staff puts out information on Eisenhower plans.

Watch for Eisenhower to really get his back up. The Democratic charge that he's a part-time President, limited in activities by his health, is beginning to tell. Earlier ideas of a "front porch" campaign, waged from Washington and the Gettysburg farm, will be pushed farther into the rear. Truman's crack about a racketeer regime will get Eisenhower attention.

Note the Sept. 12 rally at Gettysburg. It's an added starter in the plans of the President. There will be no buying of radio and TV time for this. The networks can cover it, or leave it alone. But, as a news event, it will make headlines. No news outlet will pass it up.

There will be plane trips and train trips, just as in the old fights for political advantage (see page 32). Shoe leather will be used, too. The President will get out and shake hands with the voters. You will see this when he goes to the ploughing match at Newton, Iowa. And his speech there will be a major speech, despite the White House disclaimers.

And Eisenhower's schedule will be extended as the campaign develops. Stevenson will set a fast pace, aimed at showing up Eisenhower's health. The inclination at the White House is to ignore much of this barn-storming. But in fact, Eisenhower will move to meet it.

Here's how Eisenhower's campaign will break down:

The start will be with the farmers. The promise will be policies aimed at 100% of parity, not through federal subsidy, but in the markets. The "how" of this will remain vague, as in 1952.

Labor will come in for a major address. Stevenson got the coveted spot, Cadillac Square, in Detroit on Labor Day. Eisenhower will hit back on the theme of continued good times for the rank and file. He will remind union members that power in Washington for their bosses is not really essential to their own family welfare.

There will be a chapter for business—an assurance that Washington policy will encourage growth that is needed to provide the jobs for an expanding labor force. It will accept the idea that profits are necessary.

Racial minorities will get attention. Eisenhower will stand firm behind the Supreme Court's school desegregation decision. But he will urge tolerance at the local level—and enough time for the transition.

He will campaign in the South. In 1952 he carried Texas, Oklahoma, Tennessee, Florida, and Virginia. And he ran close in a few other states in the Solid South. His future plans will be aimed at strengthening his GOP frontier. Polls show he's still popular in the area. And the GOP now holds a few House seats there that it wants to hang onto.

Look behind the Democratic optimism to the reasons why.

The party seems pretty solid. There are splits, of course. But so far

### WASHINGTON OUTLOOK (Continued)

WASHINGTON BUREAU SEPT. 8, 1956

no Southern leader has shown up who can drive a really big wedge between the Northern and Southern factions. Note Southern decisions to stick with the ticket. Third party moves are talked, but they lack any real leadership.

Stevenson is making more vigorous appeals to voting blocs—to labor, farmers, the small businessmen, and the minority groups. It's a return to the old New and Fair Deal formula of divide and conquer. Stevenson worked this line in 1952, but less effectively, and lost. Now, he will work it harder.

The Democratic attack will go more and more to Eisenhower. The aim will be to picture him as a part-time President, with bad health and more interested in golf and hobby-farming than in national affairs.

The Democratic answer to the 1952 landslide will be this:

Eisenhower got the breaks—as a public hero and as the man who could put an end to fighting in Korea, to Communism, and corruption in government. He was the attacker, after nearly 20 years of Democratic rule.

The landslide will be explained time and time again. You don't have to look far for the figures you will be bombarded with. The popular vote in 1952 was Eisenhower, 33.9-million, Stevenson, 27.3-million. That seems to be lopsided on the surface. But you will hear about electoral votes.

Democrats will aim at a few states—states in which Eisenhower won by small popular majorities, but got all the electoral votes.

The strategy will be to hold Southern states. That's been the real stronghold of the Democrats in the past. Eisenhower cut into this bloc in 1952. But figuring is he will find the going tougher this year, in the wake of the Supreme Court desegregation decision.

A dozen or more states will be singled out to turn the tide. Democrats argue that if they can hold what they got in 1952 and then topple what they consider the "close" states, they will be home. Stevenson's plans will be aimed at this.

Here are some of the battleground states, where a small switch in the voting would cost Eisenhower heavily:

In the East: Massachusetts, Rhode Island, Delaware, Pennsylvania, and Maryland. The Eisenhower margin was measured in thousands.

In the South: Florida and Tennessee. Both were very close.

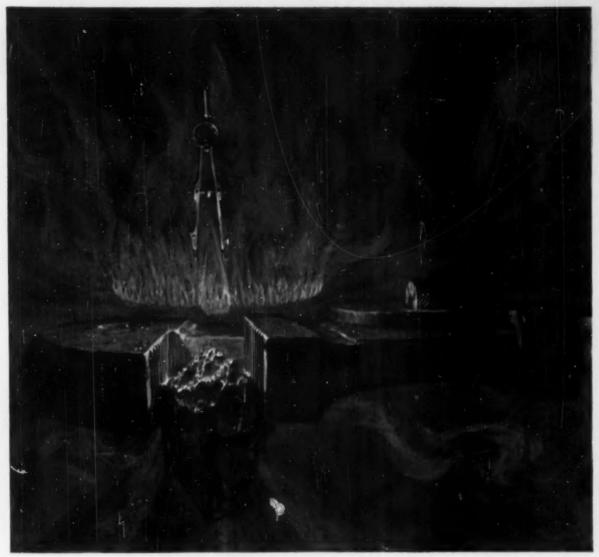
In the Southwest: Texas, Oklahoma, and New Mexico went to Eisenhower. But small shifts can well put them back in the Democratic column.

Moving up into the Midwest: Missouri, Illinois, and Minnesota showed a close division. Democrats will work them hard this time.

Note the big omissions: New York in the East, Michigan in the Midwest, and California on the West Coast. Democrats figure they can get along without these. But they will make a hard try in each.

You will see these tactics by Stevenson: He will hit every close state. The industrial Midwest and East will be special targets.

Kefauver will go after the farm vote. The rural areas are where Stevenson is weakest.



The delicate precision of a bow pencil, the inexorable power locked in the jaws of a sturdy Stillson wrench, coke and blue flame—with these symbols Stanley Meltzoff evokes the drama of gas production, and the industry's manifold contributions to the American way of life.

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New "FourSpeed" Torquatic Drive boosts vastly increasing hauling ability both



Built for the big jobs - that's the story behind the new Allison "FourSpeed" TORQMATIC DRIVE.

With its 350 horsepower rating, this TORQMATIC Converter-Transmission team has the brawn and heft to take the biggest loads and toughest hills, like a breeze.

The TORQMATIC Converter provides silken smoothness during starts and speed changes—the automatic lock-up drive provides big fuel savings during extended runs, and speeds hauling cycles on every road over any terrain.

This quick-shift TORQMATIC Transmission has the driving ease that makes the biggest off-highway trucks and scrapers handle like a driver's dream come true.

And with the built-in TORQMATIC Brake (optional), it's got a big extra margin of safety.

Many leading manufacturers of scrapers and offhighway trucks are planning to install this new "FourSpeed" TORQMATIC DRIVE to increase the performance standards of their equipment.

And the reason for the tremendous interest in this newest of all Torquatic Drives is simple.

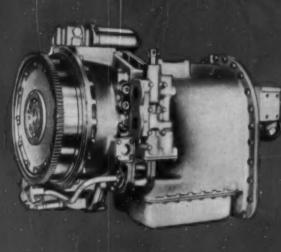
It's the only heavy-duty converter-transmission team with an automatic lock-up drive, quickshift range selection and Torqmatic Brake in one compact unit that is easy to install, free of troublesome piping and other miscellaneous accessories.

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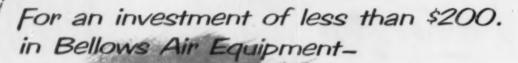
Model CBT-5640 Torquatic Transmission Write for brochure





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femple-Stuart Co., furniture manufacturers, teamed up two Bellows Air Motors and a gain in chucking wooden spindles, and at the operator put it "at the end of eight hours I'm not tired or all."

Without heavy capital investment, substantial cost savings are being made in many operations with Bellows Air Motors and Bellows "packaged" work units: tool feeds, work feeders, holding devices.

These versatile units are being used to quickly convert standard machines to semi-automatic or automatic operation; or as basic components around which to build inexpensive special purpose machines.

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Eastman Manufacturing when they combined three Bellews Air Motors in a special machine to mill and drill backlife breaker arms. This set-up is one of 25 Beliews installations in the Eastman Piant.



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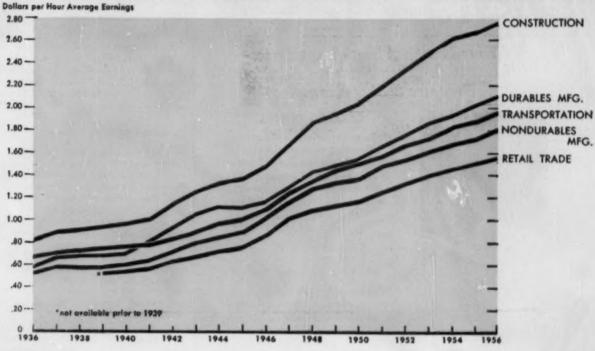
In Canada:

Bellows Pneumatic Devices of Canada, Ltd., Toronto, Ontario



Drilling a fly wheel counterweight is being done at R. C. Phelon Co. three times as fast with a Bellows Drill Press Feed and Air Vise as it could be done by hand. And the unskilled operator works with minimum fatigue.

### The 20-Year Wage Movement in U.S. Industry



Data: U. S. Dept. of Labor.

@ BUSINESS WEEK

# Search for a New Wage Theory

Wages are industry's biggest single cost. And setting wages—with or without the participation of labor unions—is probably business' biggest single headache. A businessman, if he broods about the continuous and roughly parallel upsweep of wages in durable and non-durable manufacturing, construction, transportation, and retailing during the past 20 years (chart), will want answers to a host of questions:

 Was the more than tripling of the level of wages a result of the growing power of the unions? Or of political action—such as the minimum wage law? Or of increasing productivity? Or of inflation?

 Were rising wages the result or the cause of inflation? If wages go on climbing, will this cause runaway inflation—and eventual economic collapse?

 Did rising wages help end the depression of the 1930s, or did they prolong it? What should you do in a luture downturn—cut wages or push them up?

 Have rising wages stimulated—or curbed—productivity gains and the nation's economic growth? What effect are they having now, at the top of a long boom?

 What caused wage rates in the five industries on the chart above to maintain the same order of rank since 1941? What caused the one switch in position in the entire 20-year period —the rise of wages in durable manufacturing above those in transportation?

• Why does the average construction worker earn nearly twice as much as the average retail clerk? Is it because of greater skill or knowledge? If so, why may a university instructor in paleontology or mathematics earn less than a bricklayer?

• What's the connection between wage differentials and general wage levels? Does pushing up one wage (as through the minimum wage law at the bottom or by collective bargaining at the top) push all wages, because they're all yoked together?

Questions like these are among the toughest and most important that businessmen or economists can tackle. They go to the heart of the problem of explaining the recent history and probable future course of the American econ-

omy. And, at the close range from which most businessmen see these problems, they hit directly into the area of day-to-day decision-making upon which business success or failure depends.

 Finding the Key—To find the key to solving this mass of interlocking problems is the task facing wage theory today.

Three years ago, 12 men with long experience in determining wage policy as representatives of business, labor, and government began meeting, under sponsorship of the Labor Relations Council of the University of Pennsylvania, for the purpose of evaluating the worth of inherited wage theory and—in the light of recent trends in thinking and experience—exploring new approaches to the field.

As the group hammered out its differences and insights, a common theoretical framework emerged—and one which represents a major departure from traditional wage theory.

• New Approach—Writing from this common framework, each of the group's members has now tackled a part of the sprawling was problem. The result is

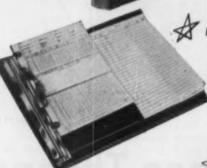


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NATIONAL BLANK BOOK STATIONER "... the classical wage theory just faded away from obsolescence . . ."

WAGES starts on p. 47

a volume, called New Concepts in Wage Determination, edited by George W. Taylor of Penn's Wharton School and Frank C. Pierson of Swarthmore, which McGraw-Hill will publish early next year. It should breathe new life into the moribund body of wage theory.

#### I. The Legacy

The main reason why inherited wage theory is of little use today is that—from our standpoint—earlier writers made false and misleading assumptions.

• Classical Theory—Classical wage theory—which held the stage from the end of the 18th Century to about 1870—was essentially simple: Population, it was maintained, determined the supply of labor. The wages fund—the sum that capitalists decide to spend on labor—determined the demand for labor. And the interaction of population and the wages fund determined the normal or subsistence rate of wages.

In the short run, if the wage rate were set too high, unemployment would result—the wage fund wouldn't cover all workers seeking jobs. If the wage rate were set too low, employers would have an unsatisfied demand for labor, and wages would be bid up to the nor-

In the long run, the wages fund could

mal level.

grow as the society's savings increased, and population could expand or contract. However, if the wage rate were set too high, laborers would over-breed, force the rate of wages below the subsistence level; then laborers would die off, reducing the labor supply until the wage rate returned to its normal level. · Fallacies-This horrendous fablewhich incidentally gave economics its name as "the dismal science"-had, during the years of the First Industrial Revolution, a certain resemblance to reality. But, as time went on, its assumptions became more and more sterile: The wages fund was not fixed either in the short or long run; business cycle swings could change it sharply. Populations did not conveniently grow and contract, once society reached higher levels of living, and wages advanced well above a "subsistence" level. There was no single wage rate but many levels of wage rates. The perfect competition and perfect mobility of labor the theory assumed never existed.

The classical wage theory, as Harvard's John Dunlop notes, wasn't driven out by a new theory—it just faded away from obsolescence, although one some-



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- the world's fastest executive plane up to 280 mph cruising.
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F-27 Friendship



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CORPORATIONS AND MILITARY SERVICES



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Our Hartford Agent made every minute count!

(Based on Company File #H54-25820)

Sizing up the situation, they

authorized immediate repairs. Most

important, naturally, were the structural work and the electric wir-

ing. They located contractors who

could begin repairs that night. And

both agent and adjuster spent all

day Sunday on the premises. Under

their watchful eyes, the work moved

were able to reopen Monday morn-

ing. "Business as usual" - just 36

Thanks to this splendid help, we

Last-minute Saturday shoppers ran for the street when fire broke out in our supermarket.

We turned in an alarm at once. But by the time the fire was under control, our one-story building was badly damaged, and our food freezer equipment knocked out.

My partner meanwhile had called our Hartford Agent. He said not to worry. The Agent got hold of the local adjuster and the two of them were at the store within an hour.

No lost time here. No lost motion.

There are situations, of course, that take longer than 36 hours to straighten out. But prompt service is always a Hartford objective.

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Year in and year out you'll do well with the

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Twin City Fire Insurance Company . . . . Minneapolis 2, Minnesota

times still hears its ghost rattling around.

• Marginal Productivity—In time, the center of the stage came to be occupied by a tricky new wage theory, the bane of every college sophomore's existence, which went by the name of marginal productivity. What the theory seemed to say was that the extra production you got from hiring an extra worker would determine the wages of all workers. But on closer inspection, the theory didn't say that at all—but only that, at the rate of wages set in the general market, employers would go on hiring workers until the product added by the last worker hired equaled the wage he had to be paid. And that wage was set, not by the individual employer, but by the total supply of and demand for labor.

So the marginal productivity theory was really not a theory of wages at all, but a theory of employment, accounting for a company's demand for labor. The wage rate allegedly also determined the supply of labor, however, by determining the point at which the "marginal utility" of the wage—that is, the pleasure of getting extra money—exactly balanced the pain of having to go to work

• Useless Tool—But this theory—which made all the phony assumptions of the classical doctrine and added a few—was never really useful for anything but academic fun and games. It may have served a sort of moral purpose by instructing society that the workingman gets out of production—at least under perfect competition—just what he puts into it. Or, at any rate, the marginal worker does. And, since all labor is homogeneous, so the theory goes, one worker is as marginal as the next. So all must get the same wage.

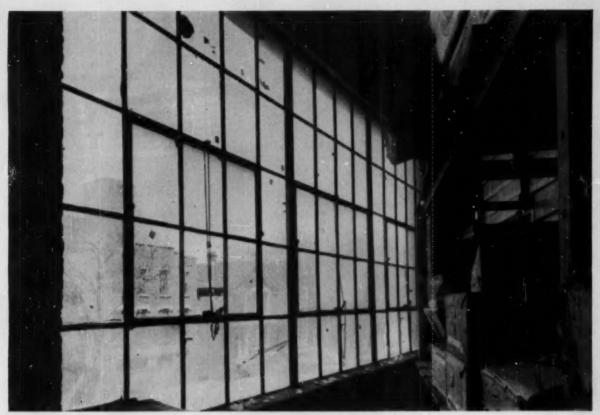
#### II. The Shock of Keynes

Wage theory-like the rest of economic doctrine—had fallen into a state of slumbrous complacency when the great depression of the 1930s struck, It woke up with a jolt.

It woke up with a jolt.

• Unemployment Problem—The great problem facing all economists was how to solve the unemployment problem. "Sound" economists continued to preach the dogmas of the old masters: General unemployment was to be explained exactly like particular unemployment—it resulted from workers asking to be paid too much. To increase employment, you should cut wages. The fact that unemployment got worse as wages declined did not shake the faith of respectable economists in this hallowed doctrine. The facts of reality, it has been said, can never destroy a theory. It takes a new theory to destroy an old one.

· New Explanation-The new theory



# There's a permanent solution to your plant window problems

Here's a money-saving tip to the man whose job it is to look at windows instead of through them—when you see signs of recurring window maintenance expense, it's a good time to consider a permanent cure instead of spending money for temporary relief.

You know the tell-tale signs of window headaches all too well—broken window panes; loose putty; sash encrusted with rust, rot, and repeated painting. The discouraging thing is that the first repair job is never the last because what you have repaired is still exposed to the threats that caused the original trouble.

Happily, the problem has a "fix-it-and-forget-it" solution. PC Glass Blocks. The blocks are mortared into rugged,

breakage-resistant panels. There's no putty to loosen. There's nothing to rust, rot, or paint. Washing once or twice a year is all that's necessary. It all adds up to a permanent solution to your plant window problems.

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that wrecked the classical doctrine was provided by the British economist, John Maynard Keynes. In essence, his General Theory of Employment, Interest and Money demonstrated that the level of employment was determined, not simply by the rate of wages, but by a host of factors, including the quantity of money, changes in consumers' willingness to spend, changes in the rate of return over cost to investors, and on investors' decisions to hold cash. Keynes used these elements as moving parts in his abstract model of the economic system.

• Theoretical Split—But for the wage theory he built into his new model, Keynes cannibalized the classical model. His wage theory—which he never spelled out carefully—is essentially the marginal productivity theory, with all its oversimplified assumptions. Struck by the shock of Keynes, students of wages split

into two camps:

 One group was entranced with the new Keynesian system and wanted to refine its rather confused discussion of the effect of "real" and "money" wages upon changes in national production and employment. These economists used a "deductive" approach, reasoning on the basis of a few highly restrictive assumptions about the labor market and the psychology of workers.

• The other camp could not abide the crude and false assumptions of the "general theorists" and so made no theoretical assumptions—and, in fact, held no theory. Instead, this second group tirelessly accumulated the brute facts about wages, fringes, job skills, collective bargaining procedures, productivity, and so on, hoping desperately that some sort of understanding of the wage determination process would emerge from the mountain of facts. Theirs was the so-called "inductive" approach.

And the two groups declared war on each other, a war that still goes on.

• Muddle—As Frank C. Pierson dryly notes in one of the essays in the forthcoming volume on wage determination, "The fact that each group is still inclined to disparage the work of the other is an indication that neither approach has been conspicuously successful. Few would deny that wage theory is one of the more muddled branches of the economics at the present time."

Indeed, the main object of the Pennsylvania-sponsored group of labor specialists was to bring the two methods of inquiry together, so that each would enrich and advance the other.

#### III. Marrying Fact and Theory

The Pennsylvania group's approach to the wage problem, as George Taylor says, has "one foot in general economic theory and one foot in labor-manageHoro's LATEST NEWS

Cooper-Bessemer centrifugal compressor an 6-cycle ges engine, soparated by fire wall, con prise unitized set-up in Gulf Interstate's un bacellite station for boudling over 400 mills cubic feet a day at 955 ps. Note compactus of station in view of lower right.

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#### "... structure of wage rates is shown to be a tightly balanced system . . ."

WAGES starts on p. 47

ment relations." And all elements determining the level and structure of

wages are interrelated.

• The Wage Structure-The structure of wage rates, within a company, within an industry, between different industries and national regions, is shown to be not a hodge-podge of random numbers but a tightly balanced system. The elements in this system, as John Dunlop defines

· A job cluster-a stable group of job classifications or work assignments within a company that are linked together by technology, the administrative organization of the productive process, and social custom. So the tool room in a plant makes up a job cluster, or the engine room on a tanker, or the sports department on a newspaper. And the wage rates for employees within each job cluster are more closely related to each other than to the rates for workers anywhere else in the outfit. The structure of wages within the job cluster consists of a key rate-either the rate paid to the employee at the top of the cluster's promotion ladder or the rate paid to a large group of workers-and a group of associated rates.

· The wage structure of a plant or company is made up by a set of the job clusters. And the key rates in each different cluster obviously will be related to some extent-and, again, technology, organization, or custom will influence

their pattern.

• The wage structures of a stable group of companies-linked together by a common product or labor marketmake up a wage contour. A wage contour has three dimensions: (1) particular occupations or job clusters, (2) a sector of industry, and (3) a geographical location. Some wage contours may be national in scope-as in basic steel production. Some operations within a company may be excluded from its basic wage contour-as cement mills or shipping are excluded from the basic steel contour.

The wage contour itself is essentially the result of one, or several, wage bargains, which may be set by the largest company, the price leader, or the company exerting labor relations leadership.

Wage-making forces, Dunlop holds. are concentrated on the key rates in the wage contours and job clusters.

This conception of wage structure clears the ground for a brilliant, close-in analysis by George Taylor of the wage determination process under various conditions-where wages are set by individual bargaining (almost a vanished

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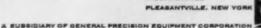
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# ".... collective bargaining may have retarded the wage rise somewhat..."

WAGES starts on p. 47

American institution), management, collective bargaining, or a strong union. · Inter-relation-The structure of wages and the level of wages are closely connected. Each affects the other. But, in determining the level of wages, the analysis must be broadened to take in the factors that determine (1) the course of the national economy, (2) the expansion or contraction of the particular industry, and (3) the economic position of the individual company, including the position it holds in its market, whether it can or can't pass wage increases along, how big a share of product cost the wage bill makes up.

The Pennsylvania study is strongest in building up the framework for analyzing the structure of wages. It is weakest on the relation of wages to broad economic developments—such as price movements, the level of employment, the business cycle, and economic growth. That's because of the somewhat muddled state of general economic theory. And the Pennsylvania group could not be expected to revolutionize this theory overnight when you consider that economists in many nations are still at it after decades of work.

• Wages and Inflation—Nevertheless, the group takes a manly swing at such issues. Particularly interesting is the finding of Yale University's Lloyd G. Reynolds, who, in his essay on the general level of wages, concludes that the growth of unions and collective bargaining has not had as much impact on the money wage level as has sometimes been suggested, and that rising wages do not constitute a serious inflationary

"Assuming that no major war occurs," says Reynolds, "it seems likely that the price level will rise only slightly over the next several decades. Concretely, I should be surprised if the wholesale price index in 1980 were more than 25% above the 1955 level." Reynolds finds many recent predictions of a marked long-run uptrend in prices to be "unduly influenced by the events of the forties, just as previous hypotheses of chronic stagnation were unduly influenced by the thirties."

#### IV. Providing the Answers

It would take a book—and a much longer one than the bulky volume the Taylor-Pierson group has written—to give full answers to all the questions raised at the start of this article. But you can see the shape of the answers

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ANY ONE OF 1000 MIXTURES is delivered to truck within seconds after operator gives machine punched-card instructions.

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Write today for complete information on any of these Bristol products for your critical applications. The Bristol Company, 164 Bristol Road, Waterbury 20, Conn. emerging from their study. Ticking them off briefly, the answers might go

• The tripling of wages in the past 20 years was not primarily a result of collective bargaining. If anything, collective bargaining may have retarded the wage rise somewhat. The main causes of the increase were national economic expansion, inflation resulting from World War II and Korea, and rising productivity. Pushing up the minimum wage was of negligible importance.

 Rising wages are more the result than the cause of inflation. Runaway inflation from current wage boosts

looks improbable.

 But raising wages did little to end the depression of the 1930s. World War II did that. And, in a future serious downturn, it would be of no value to try to force wages up. The task of curbing recessions is essentially a job for monetary and fiscal policy.

• The parallel climb of wages in durable and nondurable manufacturing, transportation, construction, and retail trade—and the relative order of wages in those industries—reflect the general expansion of the U.S. economy, competitive strength, price and earning position, and growth of each of those industries, and the supply of specific kinds of labor to each of them. The forward surge of durable manufacturing industry, as opposed to the slower growth of transportation, would appear to account for the switch in their relative wage positions compared with 20 years ago.

• The construction worker earns so much more than the retail clerk because it's worth it to an employer to pay him more. And a separate volume could be written to explain all the labor and product market factors that lie behind that assertion. But—as in the case of the paleontologist vs. the bricklayer—skill or knowledge as such do not necessarily command a high wage.

• The connection between wage differentials and general wage levels is a highly complex one. But the connection exists—for all wages are related. However, as California's Arthur Ross comments, "Some wages are more related than others." A more intense study of key bargains and key rates, wage clusters and wage contours, should clarify the relationships.

The Pennsylvania study has not entirely resolved the Hobson's choice that confronts wage theory, as Frank Pierson puts it: "Either to be clear and meaningless, or confused and relevant." But it has made a valiant beginning.

For the nation as a whole, the wage structure reflects the course of the country's industrialization. Differentials are necessary to attract workers to quickly expanding industries from other industries or from agriculture. END

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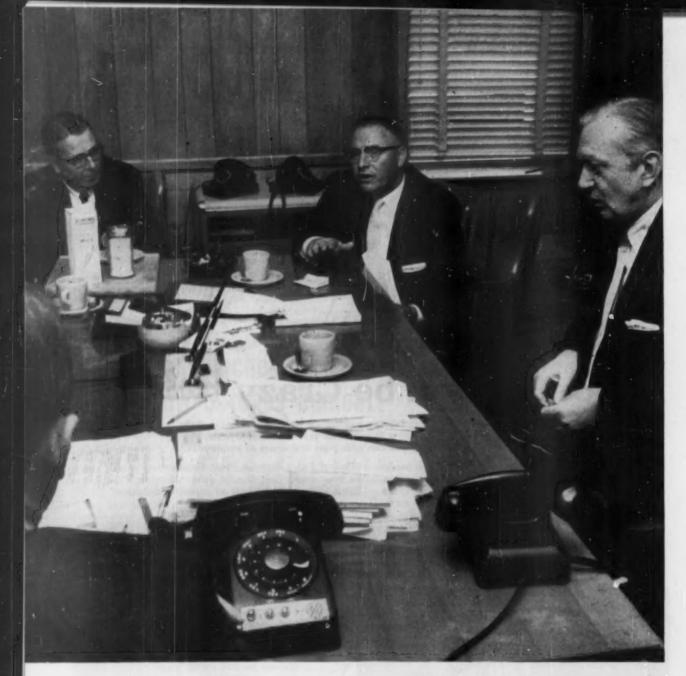
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CITY

STATE



# Teamsters Drive Tests the

The nation's biggest union, the Brotherhood of Teamsters, right now is concentrating some of its biggest organizing talent in Greater Philadelphia.

Like all Teamsters operations, the Philadelphia-area drive is part of a grand strategy for a greatly expanded, immensely powerful union. If the saturation drive pays off, it will gather in some 20,000 new members—and these will be only a drop in the bucket the union expects to fill by using the same tactics elsewhere.

The planners in Philadelphia now include such men as Larry Steinberg (above, back to camera) of Toledo, and (left to right) Teamsters Vice-Pres. Einar Mohn. Bakery & Confectionary Workers' George Stewart, and Thomas Flynn, head of the Eastern Conference of Teamsters. They have offered strong manpower, substantial financial backing, and specialized help for a drive in eastern Pennsylvania, southern New Jersey, Delaware, and coastal Maryland.

The Teamsters' immediate goal is

20,000 new members in industries with a half-million unorganized employees. Chances are the union will do at least that well in the 12 months allotted to a saturation campaign to unionize "everything on wheels" or even remotely allied with motor transport.

• Questions—If any other union predicted that it would have a 2-million membership a year from now, evebrows would be raised skeptically. But Dave Beck's Teamsters—who already hold the top union position with a



ALLY: Leon Schacter (standing) pledges cooperation of AFL-CIO Meatcutters.



STRATEGY conference involves Eastern Teamsters' leader Flynn (left) and Lou Lanni, a Philadelphia local leader.

> TARGETS are set by Bob McQuarrie (left), Melroy Horn (right) from St. Louis, and automotive division organizers.

# Hard-Boiled Approach

claimed 1.3-million members—are flatly predicting such a substantial growth and are being taken seriously.

If they're right, it could have repercussions throughout industry and labor. For the Teamsters, more than any other big union, stand for a tough, hard-boiled approach to organization. They have an unsavory reputation, and if their methods succeed, it will raise questions:

 Is the Teamsters' reputation deserved?

· Is the anti-social behavior attrib-

uted to the Teamsters essential to effective organizing in the face of legal restraints and employer and community opposition? Are other unions less effective because they shun such practices?

 Is the professed distaste of other unions and other labor leaders for the Teamsters based on concern that their controversial practices give all labor a black eye—or on fear for jurisdictional boundaries and jealousy of Teamster power?

· What might be the ultimate re-

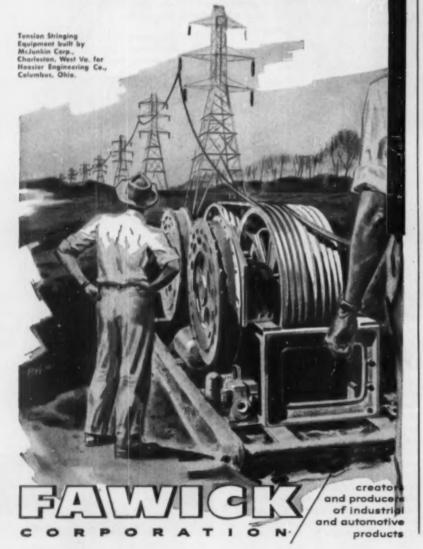


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sult-in law or public disfavor-if other unions follow the Teamsters' lead and adopt tactics that are now in general disrepute?

There are many other questions about the Teamsters, including pointed ones about the union's stormy petrel James Hoffa and Hoffa-type lower-echelon leaders. Most will go unanswered for the present. Despite close scrutiny by many probers, disclosures have been almost entirely limited to localized, lower-level malpractices. Those higher up have been mentioned, but accusations haven't been proved in court.

Up to now, most blanket charges against the Teamsters have been shrugged off in labor circles as an inevitable consequence of the union's vigorous organizing—undoubtedly the most aggressive and far-reaching in the country today. But if there is further expansion of the kind the union foresees—greatly increasing the power of Teamster leaders—charges will grow proportionately serious. Congress might act.

• Concern—Outside the Teamsters, labor is frankly concerned over this possibility. It fears, realistically, that any possible steps would hit all unions—not just the Teamsters.

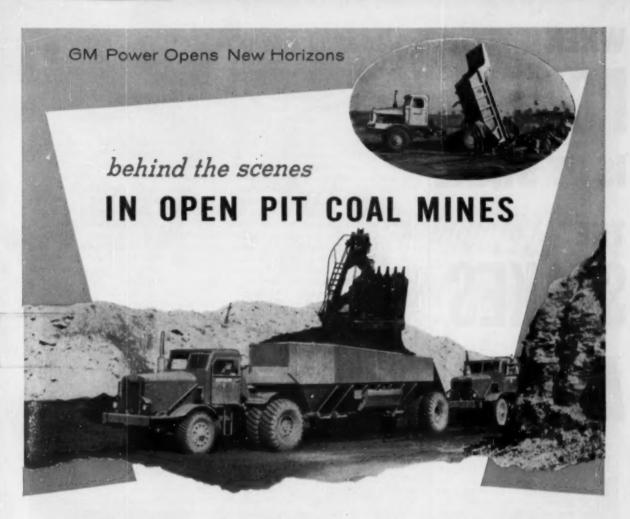
Inside the sprawling union, the reputation for suspect practices isn't causing any real worry as long as the union prospers and expands. The possibility of investigations and legal actions is of concern only for the effects they could have on organizing. The risk of being ostrasized by the rest of the labor movement is pooh-poohed. As one Teamsters official put it, "We can do without them easier than they can do without us."

Such a belief is based on the fact that the Teamsters today make up nearly 10% of the AFL-CIO numerical strength—and, perhaps more importantly, of its financial backing. Moreover, the union has its own inner vitality; the Teamsters claim 200,000 new dues-paying members in the last three years, and contend that other unions can't begin to match this figure.

#### I. Teamsters' Targets

There is no one explanation for the Teamsters' rise to power. In part, the union has shot ahead with the expanding trucking industry—just as the United Steelworkers and the United Auto Workers have grown along with their industries.

However, the Teamsters growth record has outstripped the rest. The union operates in an industry that isn't isolated behind plant gates; its jurisdictional field—as interpreted by the Teamsters—has almost no boundaries. It covers such diverse jobs as warchousemen, plant workers, clerks, white-collarites, vending machine attendants, or anyone who has anything at all to do



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with a truck or truck-transported goods. Truck drivers now make up only about a third of the Teamsters membership.

• The Push-The drive under way in the Greater Philadelphia area, with 21 of an assigned 50 organizers getting things moving, illustrates the range of the Teamsters' interests. It's aimed at drug and chemical plants (only one of four major plants in the area are organized now), paper companies (about 24 of 150 are now unionized), food vending machine makers, warehousers, distributors and suppliers, and automotive firms making or installing seat covers, glass, springs, and other parts or operating service stations and car wash places. Obviously this means conflict with AFL-CIO's Oil, Atomic & Chemical Workers, two paper workers' unions, the United Auto Workers (which has countered by sending a crew of organizers into Philadelphia for its own drive) and the Retail Clerks. This does not bother the Teamsters. An official commented that his union is only after workers "the other unions have never organized-we'll worry about jurisdiction later.'

Although they make up only one in three Teamsters members, the truck drivers give the union its toughness. Through them, the Teamsters union controls industry's economic lifelines.

· Pressure-Dave Beck's union, like Dan Tobin's Teamsters in the past, takes full advantage of its position in industry. Under Beck, and more precisely under Jimmy Hoffa, the union's pressure technique has been perfected. While other unions try to "sell" union membership to workers through pamphicts, home visits, and so on (BW-Jul. 7'56,p110), the Teamsters organizers usually go after the employer first. Often they garner the new members almost without counting the number of employees in the bargaining unit.

The strategy of pressuring the nonunion employer-by having the Team-sters truck drivers that deliver or pick up at his plant refuse to handle his goods-is an effective way of persuading the employer that his workers should join the union. After that, getting them in is easy.

Nevertheless, in the current Philadelphia area drive, approaches to companies are being made, according to union leaders, only to convince them "we're not gangsters or Communists or anything like that-we want them to know that as far as the health of their company is concerned, their aims are our aims."

Until recently, the pressure on employers was legal through a contract device known as the "hot cargo" clause. This got around the Taft-Hartley ban on secondary boycotts by specifically contracting that drivers of a unionized company could refuse to handle goods of another employer labeled "unfair"usually, products handled somewhere along the line by nonunion workers.

Some employers fought back, and, within the past year, won court victories against the "hot cargo" pressure tactics. Teamsters attorneys are now trying to write a new clause to give the union's truck drivers a clearer legal right to refuse to handle "unfair" goods.

· New Approach-Meanwhile, Teamsters are trying out new tacticsalmost taking a backward step to methods more nearly approximating those of other unions. This is why the Philadelphia drive is particularly important. It's a test of whether thorough, hard-hitting use of more acceptable practices can produce results. This time, according to a campaign official, the union will try "organizing with our heads, not our fists."

To back up the drive, experts from the union's Washington headquarters, researched Philadelphia area employers from top to bottom. They have compiled a list of target firms, with their size, standing in the industry, profits, and wage levels-contrasted, where possible, with figures for competitive

Although these research findings are undoubtedly useful in "contacting" employers, the union says its present plans are to utilize them in a sales approach to nonunion workers.

#### II. Trial Balloon

If the Greater Philadelphia operation shows that slower-paced campaigning can succeed, the Teamsters organizing staff plans to move into New York City. Most truck routes eventually touch its big terminals. If the Teamsters can control deliveries to and from the city, it can apply pressure on employers almost everywhere.

This strategy is effective because it is economically potent. While it is dependent upon the skills of the men who run the union-Dave Beck and Jimmy Hoffa and their aides-it depends even more on the closely inter-related nature of the industry. The same economic weapons are not available to other union leaders such as John L. Lewis, Walter Reuther, or David J. McDonald. Because they aren't, the others feel no temptation to adopt a similar tough policy and can frown on most Teamsters pressure tactics.

· Philosophy-The Teamsters officials' basic philosophy includes blanket acceptance of the entire strategy. They consider that the end-better wages and working conditions-justifies any means. The best interests of "our people" override all other considerations, they say. Other unions, most of which claim their jurisdictions have been raided by the Teamsters, contend that



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the Beck-Hoffa leadership continually ignores the best interests of the labor movement as a whole.

Many say, too, that, unfortunately, the professed interest in the welfare of rank-and-file workers seems to go hand in hand with an interest in amassing power. The combination, they say, is demonstrated in the Teamsters willingness to ride roughshod over other unions.

Hoffa comments that the labor criticism of the Teamsters and its officers is heard only because "we are strong, and when you are strong people distrust you, or snipe at you, or fear you." He adds that the Teamsters have made clear that they are willing to sign mutual aid and jurisdictional pacts with any other union that will agree that the Teamsters' union has a clear right to represent "certain workers" wherever they may be found in industry. A few unions have done this. For most, the Teamsters' terms are unacceptable.

#### III. Strictly a Business

The attitude of Beck and Hoffa and their allies toward union leadership is also a ground for criticism within the labor movement (particularly from the former CIO bloc of social-minded unions) and on the outside. They consider running a union to be a business—not a social mission. And Beck and Hoffa feel, pragmatically, that they should be paid well for organizing and bargaining successes—in salaries, limousines, and even union-bought homes.

Teamsters' Pres. Beck reportedly has become a millionaire while a union officer, from business ownerships and private investments. At the same time, he watches over the Teamsters' finances with a similar idea of making money for the union-and he has succeeded. Much of the union's revenues is put into organizing funds. · Crown Prince-Hoffa is out of the Beck mold. Head of the union's Central States Conference, Hoffa's importance reaches far beyond that of any regional leader; he's considered the union's real sparkplug and in a matter of a few years Beck's probable successor (BW-Mar.24'56,p164).

Hoffa, in a sense, symbolizes the Teamster officer and his reputation. His private investments on a \$21,000 salary—in a financial concern, a brewery and a racetrack—show the affluence Hoffa and Beck acknowledge as smart business. They also have made him a target for pointed questions in labor probes. Other union leaders, such as Reuther, who lives an austere life criticize the Teamsters' leaders for making too good a thing out of labor

· Mark of Success-Hoffa's background



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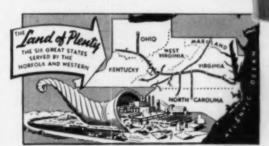
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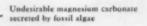
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RON OXIDE (Fe <sub>2</sub> O <sub>3</sub> )	.072	.043	049
ALLMANA (A12Os)	.21	.20	12
LIME (CoO).	55.00	54.90	55.40
MAGNESIA (MgO)	.65	.67	.51
SULPHUR ISI	.012	.011	.015
PHOSPHORUS (P)	.006	.006	.009
IGNITION LOSS	43.20	43.50	43.20
CALCRIM CARBONATE (Calculated)	97.90	97.72	90.51
MAGNESIUM CARRONATE (Cotosiumed)	1.36	1.30	1.07



and associations contribute largely to the corruption charges made against the Teamsters. Hoffa himself says he has "a list of arrests maybe as long as your arm, but no convictions." He has no qualms about it, feeling, as many Teamsters officers down the line do, that a successful labor leader must be prepared today to flit from picket line to pokey to the lectern of a university. In Hoffa's words, it's a mark of success when "people with selfish motives . . . attempt to destroy your reputation and your effectiveness." Teamsters officers say that those who deal with them "fairly and honestly know we are reasonable men."

• Critics—Many businessmen and laborites strongly suspect the "reasonableness" of the Teamsters leaders. They contend that Hoffa, for instance, is "reasonable" only in the case of either the union's or his own interests.

Union leaders cite as an example Hoffa's "unholy alliance" with the International Longshoremen's Assn. in New York even though AFL-CIO is fighting ILA through a rival union. Hoffa says it's "good business" to work closely with ILA, despite its reputation for crooked leadership in the past, because the alliance could facilitate Teamsters organizing in southern ports. Besides, says Hoffa, nobody has proved that ILA now is corrupt.

Hoffa, on the other hand, just last week turned down a reported attempt by an ex-convict union leader to get a Teamsters charter for a 10,000-member Chicago local of industrial workers. Hoffa said the "conduct" of the leader was "not compatible with the principles and policies" of the Teamsters which, he added, has "no room in it

for dishonest people. Hoffa's "reasonableness" is also under sharp labor criticism centered in Minneapolis, where he is supporting a \$200,000 loan from Teamsters health and welfare funds to John W. Thomas Co., a department store that has been picketed for three years by the AFL-CIO Retail Clerks in an organizing drive. The Retail Clerks contend that the loan is a Teamsters move, taken with management, aimed at a contract covering store workers who are in the jurisdiction of the picketing union, the Retail Clerks. Hoffa denies any such deal; he says the loan was simply good business, a 5% loan payable over three years and backed by a lien on certain

valuable company property.

Hoffa's associations have resulted in strong criticism. If it has worried him, he hasn't shown any signs of it. The controversial associations are continuing. For instance, he is backing John O'Rourke for head of the Teamsters' Joint Council in New York, though O'Rourke's name has come up in New York labor investigations. Hoffa



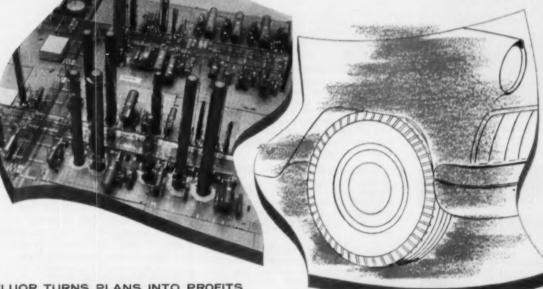
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The new Minneapolis home office of the Lutheran Brotherhood life insurance society is a striking example of modern "curtain wall" building construction. Each of the 768 panels contains a green porcelain section and a window unit in a stainless steel frame.

These modern and colorful panels were furnished and installed by the Flour City Ornamental Iron Company. In the Flour City plant, they used four air-powered Graco Powerflo Pumps to seal every joint, seam and sill in the panels. The pumps extruded the caulking material right out of the original 5-gallon pails . . . direct from pail to panel.

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ECT-FROM-DRUM" PUMPS

wants O'Rourke because he feels he will cooperate to the hilt in New York terminals in a campaign to unionize southern truck drivers.

· In the Clear-While Hoffa probably wouldn't be so blunt about it, his attitude is that no matter what charges are brought against a union leader, as long as he is free to work for the union -and is useful to it-he's still in the clear. Many charges against the Teamsters as a union stem from the fact that quite a number of those in leadership positions fit into such a category.

Being useful to the union means, among other things, having an abundance of energy and a full share of initiative. Hoffa is brimful of both. Because he is, he's moved into virtually all the Teamsters' major programs. He initiated many of these in his own Central States Conference. One of the most controversial (many employers fear the precedent) is a series of areawide contracts covering groups of drivers in 23 states, including some in neighboring Southern and Eastern Conferences, extending Hoffa's personal Hoffa says that common sense, not desire for power, is behind the area pacts.

Hoffa also is credited with equalizing drivers' pay, winning extensive pension agreements, and generally scoring negotiating successes that are on a par with -or top-accomplishments by other negotiators in other industries.

#### V. Survival of the Stronger

Generally, from Beck on down the Teamsters' hierarchy, the business of unionism is considered an economic battle with management. The union expects a fight from an employer, and goes by the rule that the strong will survive. The employer most likely to face Teamster demands is the one best able to meet them. The others don't go unnoticed, of course. In time they get their demands, too, and they may be just as large. But, according to the Teamsters leadership, "valid complaints or problems" are listened to-and, if necessary, less-prosperous firms are given a break. The unionists cite instances to prove this.

On the other hand, many small emplovers contend that the Teamsters' whole philosophy favors major companies; they quote Harold Gibbons, Hoffa's righthand man in St. Louis, as saying that if small companies unable to meet big labor demands go to the wall, it is "because they were bound to fail anyway, even if we had not been in the picture. The fact is, some businesses cannot hope to operate successfully because they are undercapitalized, or because their management simply isn't qualified to be management."

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## In Labor

### SUB Gets First Real Trial In Farm Equipment Industry

The farm equipment industry—hard-hit by unemployment this summer (page 192)—this week gets the first big test of its supplemental unemployment benefits plan. First payments went into effect Monday under United Auto Workers-negotiated SUB plans covering 52,000 workers at International Harvester Co. and Allis-Chalmers Co. The John Deere Co. and Caterpillar Tractor Co. plans went into operation a month ago, but those two companies have little unemployment.

To be eligible for benefits, Harvester and A-C workers must have one year's seniority, qualify for state unemployment benefits, and must have been laid off after Aug. 1. On Aug. 1, Harvester already had about 7,000 laid-off implement workers—they won't be eligible for SUB. But another 8,300 are slated to be laid off through temporary plant shutdowns between Sept. 24 and Nov. 5; these will qualify for SUB if they meet the other requirements. A-C has 2,600 on layoff, some of whom will get benefits.

For the past year, Harvester has been putting 5¢ per hour per employee into the SUB fund, which now stands at about \$3.5-million. Ivan Willis, Harvester industrial relations vice-president, points out that at the fund's current level no employees will collect benefits for the full 26 weeks provided in the contract. Duration of benefits will range from less than four weeks to nearly 21 weeks, depending on service.

As for upcoming layoffs, Willis says they won't "jeopardize the fund to the extent that we will be unable to pay supplemental benefits."

## Two Precedent-Setting Cases Start Way Toward Supreme Court

Two potentially precedent-setting cases are on their way up through the courts.

In Missouri, a circuit court judge upheld an injunction against three locals of the Oil, Chemical & Atomic Workers, restraining them from striking against the Laclede Gas Co. During a labor dispute, Gov. Phil Donnelly had seized the company, under the state's nine-year old King-Thompson law that prohibits utility strikes. The union says it will carry its case—the first challenge of the law's constitutionality—to the U. S. Supreme Court if necessary. Also involved is a state-filed \$245,000 damage suit against the union.

In the other case, a group of New Jersey engineers employed by Westinghouse Electric Corp. are suing the National Labor Relations Board before the U.S. District Court in the District of Columbia. The engineers are represented at Westinghouse by IUE. But during contract talks last winter the professional workers decided

they'd rather not be IUE-represented; they petitioned NLRB for a decertification election. Taft-Hartley permits such employees to determine whether they want to be included in a bargaining unit of nonprofessional workers but is silent on decertification.

At one time, NLRB ruled that professional workers could seek decertification as a unit. Then, it reversed itself and has refused the Westinghouse engineers' petition. Because this issue has far-reaching effects for union as well as nonunion engineers and other professional workers, the unusual move of suing the NLRB to force it to change its ruling was taken.

## New York State Unions Start Registering Welfare Funds

Leaders of New York local unions are busy filling out registration forms. It's all part of the first week's activity under New York state's new welfare fund law that went into effect last Saturday (BW-Apr.28'56, p156). A major requirement of the law is that all funds in the state register with the Insurance Dept.

To get the law's administration under way, Murray Isaacs, director of the newly created Welfare Fund Bureau in the Insurance Dept., sent letters to more than 3,000 locals informing them of the law's provisions and asking if they had welfare funds. Some 1,500 have responded, and Isaacs will check on the others. So far, about 900 jointly administered funds appear to be covered by the law.

Only a skeleton staff now runs the bureau on a budget of \$75,000 until Apr. 1.

#### Labor Briefs

A nationwide system of universal prepaid medical care is on the bargaining program for the International Assn. of Machinists. A new drive toward this end was recommended to the IAM's convention in San Francisco this week by the union's executive council after it learned that nearly 86% of the members are covered by the negotiated health insurance plans.

Aid for pay hikes came to the National Federation of Post Office Clerks at their golden anniversary convention in Chicago last week. Support came from Sen. Olin Johnston (D-S.C.), chairman of the Senate Post Office committee. Johnston told the 115,000-member union that if he is committee chairman next year, the union's pay demands will receive high priority.

Great Lakes ore boats are all moving again. This week, the Marine Engineers Benevolent Assn. and the Masters, Mates & Pilots Assn. signed a pact with Pittsburgh Steamship Co. after winning representation elections on the company's ships. Terms of the three-year contract: 5.5% pay boost for each year; time and one-half for all hours over eight a day or 40 a week; SUB; double-time for worked holidays the first year, double-time plus one-tenth the second, and double-time plus one-fourth the third. Total value of the package: a 40% boost.

# In Marketing

## Los Angeles Chain Makes Bid For Big West Coast Expansion

A strong retailing-wholesaling combination is in the making on the West Coast. Broadway-Hale Stores, Inc., Los Angeles department store chain, has offered to purchase control of Dohrmann Commercial Co., San Francisco. Dohrmann is one of the West's largest distributors of home furnishings; it also operates several department stores, and has leased departments in others.

Broadway-Hale wants to buy all outstanding common and 6% preferred stock for about \$9.9-million, some 20% more than the shares would command on the over-the-counter market. Last year Dohrmann netted \$525,000 on \$29-million sales. Dohrmann directors have approved the offer.

Broadway-Hale, which has been expanding by the new store route, thinks Dohrmann's homeware lines may help beef up the slimmer retail profit margins.

But some marketing men speculate that Broadway-Hale is more interested in the strong retailing outlets it would obtain through the transaction than in entering into the wholesale business. Supporting this view is the fact that the deal includes 114,000 shares of Emporium Capwell Co., which owns a number of important department stores on the West Coast, including the Emporium in San Francisco. In addition to these shares, Broadway-Hale tied to its offer a three-year option to buy some 50,000 shares of Emporium owned by families of Dohrmann officials.

But even if this option should be exercised in full, it would give Broadway-Hale only about 15% of total Emporium Capwell shares outstanding. Emporium had \$71-million in sales last year, netted about \$4-million.

### Tobacco, Latest Belgian Entry, Follows Oil Firm Into Canada

Belgian tobacco interests are going ahead with plans to penetrate the Canadian eigarette market. Tobacofina Canadian Ltd., wholly owned subsidiary of Union Financiere Belge des Tabacs, is building a \$2-million plant in Montreal, expects it to be in operation by yearend.

Tobacofina's efforts in some ways parallel those of Canadian Petrofina Ltd., an oil company and also a Belgian interest, which entered Canadian oil marketing in 1953 and has achieved considerable success (BW–Apr.16'55,p170).

Like Petrofina, the new tobacco company will face stiff competition from a few well-established companies, notably Imperial Tobacco Co. of Canada, Ltd. (which has about 70% of the tobacco market), W. C. Macdonald, Inc., and Rock City Tobacco Co., Ltd.

In spite of the similarity of names, Paul Pare, To-bacofina office manager, insists there is no connection

between it and the oil firm. For a while, both dealt with the same Belgian banking house.

Pare says his company is under no illusions about the stiff competition it faces, but is setting its sights on 10% of the market by 1965. The parent company made a two-year study of the Canadian tobacco market before launching its plans. Tobacofina, though reluctant to specify details, did let on that its design for new packages was planned by the New York package designer, Jim Nash Associates, Inc. Canadian tobacco jobbers are reportedly pleased about Tobacofina's entry. The concensus among them is that it won't mean a price cut in cigarettes.

The Belgian parent company of Tobacofina is in the retail tobacco business throughout the world, especially in Latin America and the Far East.

# Traveling Drain Pipe Sells Building Materials for Armco

A leading maker of drainage and highway materials has hit on an unusual way of promoting its products. Last week, Armco Drainage & Metal Products, Inc., of Middletown, Ohio, a subsidiary of Armco Steel Corp., started a 35-ft. length of corrugated steel sewer pipe on a 50,000-mile. 16-month tour of the country.

Armoo took a piece of elliptical pipe, 8 ft. across and 12 ft. high, and mounted it on a trailer chassis for pulling by a conventional truck tractor unit. The pipe is a standard product for culverts, except that it is made of stainless instead of carbon steel.

Inside the pipe are displays of 16 products, including water supply and sewer pipes, drains, tunnel liner plates, water control gates, highway guards, foundation piling, and sections of retaining walls and prefab steel buildings. The unit, called the Steelmobile, took about nine months to build and cost Armco \$50,000.

After a shakedown trip, the rolling show will head for Texas—which happens to be the first state to take bids for highway building under the multi-billion-dollar federal program (BW—Aug.18'56,p72). It is scheduled to visit just about every important town in the country. Armco sales people are inviting municipal, county, and state engineers to visit it—and to give Armco a generous chunk of the new construction business.

#### Marketing Briefs

National Broadcasting Co., plugging hard for color this year, will increase its evening schedule of color TV programs by some fivefold this fall. Some nights, the company says, it will have three straight hours of color programing, and every night of the week will see at least one major color broadcast.

National Assn. of Furniture Manufacturers ended its annual meeting in Chicago amid considerable optimism. Based on lively retail buying recently, the feeling is that most makers will equal or better last year's records. Manufacturers see a slight price rise to combat the increased cost of materials.



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Even the car itself! It can actually cost less because plastisol reduced production costs! Assembly lines now use grappling hooks to lift the chassis because abrasion-proof plastisol coatings on the hooks prevent marring or scratching the car surface. And the car's battery and other parts were made in a plant that coated its tanks with Exon 654 so that acids wouldn't corrode them.

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Shoppers pick up shopping carts at main entrance. Store personnel help orient the customer, head him in the right direction.

## Hardware

The people in the pictures could be stocking up at one of the country's big supermarkets. They're blocking the aisles with shopping carts, scanning the shelves for something new, and forming in line at a checkout counter, just, like at the A&P. What's off key is that their carts are bulging with hardwareeverything from screws to power tools to lumber cut to size.

Central Hardware Co.-a 53-year-old St. Louis retailer ("Everything from scoops to nuts")-borrowed the self-seryice idea for its fifth and newest store, located in Kirkwood, a suburb of St. Louis. Central claims that this store is not only the world's largest hardware store-50,000 sq. ft., 80,000 items-but it's also the first of its kind to adopt self-service.

• Pioneer-While Central has been trending toward self-service in its other four stores in St. Louis, the company decided to go overboard on the idea when it opened its new branch late last spring. The company is privately owned and gives out no sales figures, but David Oxenhandler, general manager of Central, says he is pleased with the results. "We haven't made any detailed studies, but it is my impression people are buying more here than at our other stores," he says.

Just as in a regular grocery store, shoppers come in the main entrance, pick up baskets or shopping carts, and roam the block-long aisles picking up merchandise. Then they queue up at one of eight checkout counters (four for credit, four for cash), or are checked out at registers in another part of the building.

· Three Parts-To facilitate shoppingand browsing-Central's new store is divided into three parts-a general department, a building materials section, and a "modernization" department. The general department carries the

### CHECKOUT:



# Store Takes to Supermarket Way



SUPERMARKET atmosphere at Central Hardware Co. extends from counter arrangement down to the "free loader" in pushcart.



SPECIAL ORDERS such as cut-to-size fittings carry a minimum fee.

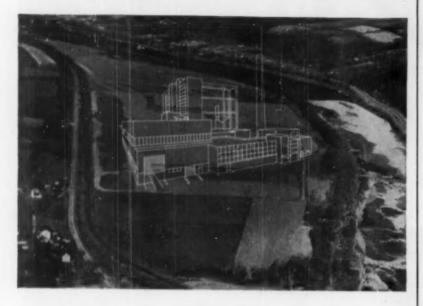
Cashiers accept customers' arithmetic on price of such items as nuts and bolts.



SALESMEN are at a minimum, but there's an expert nearby to translate "thingamijig" into wanted article.



# New Source of Power in Upper Delaware Valley



#### CHOICE INDUSTRIAL SITES NEARBY

Metropolitan Edison Company now has under construction at Portland, Pa., on the Delaware River, just below Stroudsburg, a new power plant that will generate 165,000 kw, and with a planned capacity of 1,000,000 kw.

This strategically located area—less than 80 miles from New York City, 65 miles from Philadelphia—has many excellent level sites available for industrial purposes. Served by the DL&W mainline, new highways also make this location easily accessible. Unlimited clean water; good labor market; pleasant small towns offer delightful living conditions.



Confidential information, in detail, about these and other desirable plant sites in Lackawanna Land will be sent without obligation. Write or call:

Mr. A. C. HOPKINS, Manager, Industrial Development Room 1837, 140 Cedar St., N.Y. 6, N.Y. Phone BArclay 7-2500

# Lackawanna Railroad

SHORTEST RAIL ROUTE BETWEEN NEW YORK, BUFFALO AND THE WEST

kind of merchandise that a customer can spot easily, pick up, and pay for in a hurry. For example, one counter has pipe fittings from 1 in. to 2 in. in every shape and size. Another section has row after row of small but deep bins filled with every kind of screw-2,500 in all. Every single item is price-tagged, but each department is manned by an expert in the line. This way, a customer having a plumbing or electrical problem can get suggestions as to what to buy and even how to fix it. However, the accent is on helping customers find things themselves, rather than on trying to sell them anything. The help is trained to ask anyone who looks lost "Have you found what you are looking for?" "We find," says Al Schattgen, store manager, "that people like to browse and find things for themselves." The system works to the point that a man who stops in for a can of wax is apt to browse himself into ownership of a set of power tools.

The building materials section takes one end of the building, and is filled with racks of panel materials, sheet-metal, and heavy piping of all kinds, and board lumber. In the center is a "tub" or sales island where company personnel write up the orders. Nearby, signs guide the customer to such services as getting lumber cut to size. In the case of simple jobs, Central charges only for the length of lumber bought. The scrap is put into a bin and sold off. However, there is a nominal charge for complicated cutouts.

The modernization department sells model kitchens, refrigerators, stoves, and such lines. This department has its own salesmen, who develop their leads from customers in the store, and from advertising.

• Services—Central offers one big feature that seems to be a drawing card, particularly among the do-it-yourself crowd. Often a customer sees a beautiful display of, say, lumber, and is carried away with the idea of getting on a project he has had in mind for a long time. He buys the supplies he needs, but when he carries them off, he discovers the family jalopy has shrunk. Here Central steps in, lends the customer a rack to put on top of the auto hood to tote the "impulse" purchase. The customer later returns the rack and collects his deposit.

The company isn't ready yet to say how much this type of self-service arrangement will bring down costs. Initially, it used a lot more people than needed to avoid complaints of customers used to the traditional personal service. It has found now that it isn't necessary to have a lot of expensive specialists just to fill racks and mark prices. But Central management says it still has a lot to learn about the supermarket-style store. END



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# Teasing Metal Into Odd Shapes

As the automobile industry changes the engineering and styling of its cars, it calls upon its machine tools to do ever more difficult metal-forming jobs. Now it is borrowing from the toolbox of the aircraft industry in order to handle some of the tougher demands of the 1957 models.

The machines pictured on this page have been built by Cyril Bath Co. of Solon, Ohio, in the Cleveland area. Cyril Bath specializes in making bending tools and new types of sheetmetal forming equipment, both for other companies and for its own job shop.

At right is a radial draw former in

At right is a radial draw former in the Cyril Bath shop that is already turning out graceful curves of extruded aluminum for window frames of Chrysler cars. Bottom picture at right shows the first of a series of automatic metalworking rigs that is so new that it hasn't been given a name yet. It is a variation of a radial draw former; four of these machines will be installed in a Chrysler plant next month (Bath built them to Chrysler Corp.'s specifications). Each will turn out 300 to 500 curved and grooved parts for automobile frames every hour.

• New Departure—Radial draw formers use an entirely different principle, well known but seldom applied before the late 1930s. They seize a piece of metal, stretch it, and bend it around a die. A relatively small machine will do the same shaping job on a piece of steel as a whole series of small stamping presses will do. And, Cyril Bath men say, it works to closer tolerances than the stamping process.

The principle of tensile—or stretch—forming has been widely used for 20 years or so in making aircraft wing and fuselage skins, but the process has been regarded as too slow for the auto industry, which demands machines that spew out parts at machine-gun speed. Auto plants have stuck generally to tried and proven processes of metal stamping and bending that squash a piece of metal into shape between two dies under tremendous pressure.

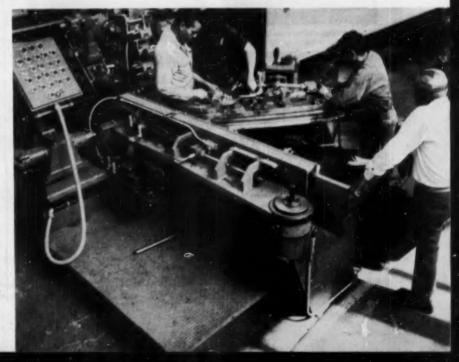
Now comes the new family of machines, worked out by Chrysler and Cyril Bath engineers in close collaboration, that combine the speed of stamping presses with the advantages of stretch forming.

 New Demands—Chrysler's venture into radial draw forming is partly due to a need for overcoming the structural weaknesses put into automobiles by the



GIANT TURNTABLE whirls extruded aluminum into curves for automobile window frames at the Cyril Bath Co., near Cleveland. The company specializes in stretch forming.

COMPLICATED COUSIN of the machine above was designed by Cyril Bath and Chrysler Corp. engineers to make auto frame parts automatically at 300 to 500 per hour.





Soon, your business will be saying Merry Christmas to its friends. Some will be valued customers . . . and some your employees. A precious human relationship is involved in each gift. You'll want something with warm personality . . . sure to be treasured. That means Zippos!

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HUGE VERSION of radial draw former shapes curves of aircraft skins.

latest trends in styling. The fashion for hardtop coupes and sedans, the wraparound windshield, the thinning-down of the roof pillars, the general demand for more glass and freer vision have all tended to reduce the car roof to a thin shell balanced on skinny supports.

For its 1957 models, Chrysler decided to beef up the roof structure, thickening the roof rail (the horizontal support under the sheetmetal) to include the drip mold in the same piece. But conventional forming presses stumbled over the complex shape of the problem to Bath.

In much the same way, a change in railroad car materials put Bath originally into the stretch forming business. Originally, the company's bread-and-butter line was an array of huge pressbrakes and tangent benders—more or less conventional compression-type machines. Then the Budd Co. began making stainless steel cars, and the older machines couldn't form the metal without great loss from breakage. It turned out that the metal could be shaped with ease by stretch forming.

• In Principle—Fundamentally, in order to change the shape of any piece of metal, you have to distort it beyond its clastic limit—its yield point—else it will spring back to its original shape.

In metal stamping, much of the force exerted on the metal merely compresses it. To shape a piece at one blow, it takes an enormous amount of pressure to go above the yield point simultaneously over the whole piece. Moreover, some metals refuse to be shaped by compression. They break.

In stretch forming, you clamp the

These are a few of the major companies that have recently located plants in the "Heart of Industrial America."



General Motors Corporation Marion, Ind.



To help you pinpoint the <u>right</u> plant site...



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This brochure contains a large-size map printed in 9 colors that shows actual locations of natural resources, waterways, railroads, and communities in our 7-state area. Address your inquiry in confidence to Mr. Lee Davis, Manager Area Development, Dept. F-09, 30 Church Street, New York 8, New York.

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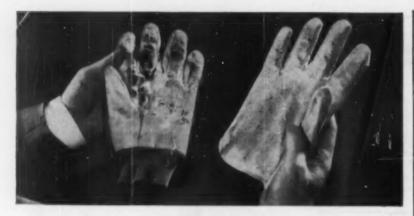
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## To a P. A. who still buys canvas

• Case No. 582 is the experience of a large appliance maker (name on request). To eliminate lint marks on highly polished laminates, they replaced canvas gloves with Edmont No. 101 lint-free gloves of impregnated fabric. Result: The job-fitted Edmonts not only solved the lint problem but wore 4 times longer, cutting their glove costs in half. Safer grip and protection against sharp edges were also noted.

Edmont makes more than 50 types of coated industrial gloves to fit the job. Use of the correct glove usually saves

companies, or their employees, 40% to 70% of glove costs.

• Free Test Offer to Employers: Send brief description of your operation, materials handled, temperature condition. Without cost we will recommend correct gloves and send samples for on-the-job comparison test.

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Pressure in business is constantly mounting. Weldwood paneling has a quiet beauty which creates an atmosphere of screnity. It helps relax the man who makes the important decisions. Shown above is the walnut paneled office of the Chairman of the Board, First National Bank of Arizona, Phoenix. This is just

one of the many fine Weldwood hardwoods. Choose from mahogany, cherry, oak, Korina\*, and Samara\*. All are available prefinished and waxed like fine furniture—ready to be put up. Nothing surpasses these fine woods for decorating beauty, yet the cost is moderate. Send for full information today.

### Weldwood WOOD PANELING



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"...radial draw formers can handle a wider variety of metals, too . . ."

STORY starts on p. 81

metal piece and stretch it to its yield point. Then you bend it around a die. It takes very little additional force to shape the metal to a die because the material, already stretched, is plastic.

That's why the new Cyril Bath-Chrysler machines require a die pressure of only 4½ tons to do the same job as a

1,200-ton stamping press.

Besides, the very act of stretching and "ironing" the metal into shape is claimed to actually strengthen the piece. The stretching elongates and aligns the grains in the metal; the ironing effect from the die presses the grains firmly into their new shape, increasing tensile strength. And radial draw formers can handle a wider variety of metals, too, such as stainless steels, high-alloy aluminums, and titanium.

• Turntables—Bath's first attempt at a stretching machine for Budd Co. work used a stationary table to which dies were attached, with rotating holders that gripped the workpiece and stretched it around a die. Machines of this design worked most of the time but when a piece broke "they were deadly dangerous." Bath men recall.

but when a piece broke "they were deadly dangerous," Bath men recall.

A safer design, Bath found, was to rotate the die table and keep the stretch holders stationary. With rotating tables resembling giant phonograph turntables, the same basic design is still in use for radial draw formers of 8 to 150 tons of

stretch capacity.

Almost all airframe manufacturers use these formers, and the maximum size has been raised in the last few years from 50-ton models to 150-tonners. Bath's designers are working on a 350-ton machine, to cost more than \$1-million, for shaping parts of a new jet aircraft.

In Bath's own shops, radial draw formers have been used to make titanium and stainless steel shrouds for the hot end of turbine power plants, as well as missile components and, now, automobile parts. So far, Bath claims to have the only stretch formers that

can bend a full circle.

• Bright Future—Pres. Cyril J. Bath, in his mid-60s, keeps a hand on all phases of his operation, which employs slightly more than 200 men. He believes in expansion, though, and feels the company has already outgrown its new buildings. But he's got an 18-acre tract with room to spare for growth. He's convinced that his machines are going to be increasingly important to the aircraft industry, with its stainless steel and nickel alloys for high-speed

# 418 General Electric <u>Thinlines</u> air condition 209 apartments in a Cleveland project

(Installed through the wall with no overhang)



"We wanted to offer permanent, built-in high-capacity air conditioning... at low cost. The General Electric Thinline answered our needs perfectly.

"Installed through the wall, there's no outside overhang, almost no space-wasting inside projection. Two General Electric *Thinline* units in each apartment pack all the cooling capacity anybody could want. And the General Electric name was our assurance that these 418 units would live long, useful, trouble-free lives."—GLENN WILLIAMSON, Heine, Crider & Williamson, Architects, Berea, Ohio.

GEORGE N. SELTZER, Builder, Cleveland, Ohio.

Advantages of the General Electric Thinline Room Air Conditioner: 1. It fits almost anywhere—through the wall or in most types of windows. 2. Compact—only 16½ from front to back, takes up ½ less space than old-style models.

3. It's economical—zone by zone cooling means no waste in unused rooms. 4. Easy to install—no costly ductwork or plumbing needed. 5. Available in various cooling capacities, all in the same size cabinet. 6. Guaranteed in writing by the General Electric Company, Louisville 1, Kentucky.

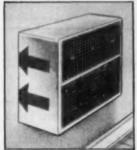
### Progress Is Our Most Important Product

## GENERAL 🚳 ELECTRIC

#### Look how easy it is to install the new General Electric Thinline through the wall:



Build the sleeve and frame into the wall during construction. The opening for the sleeve is about 27<sup>n</sup> wide by 22<sup>n</sup> high.



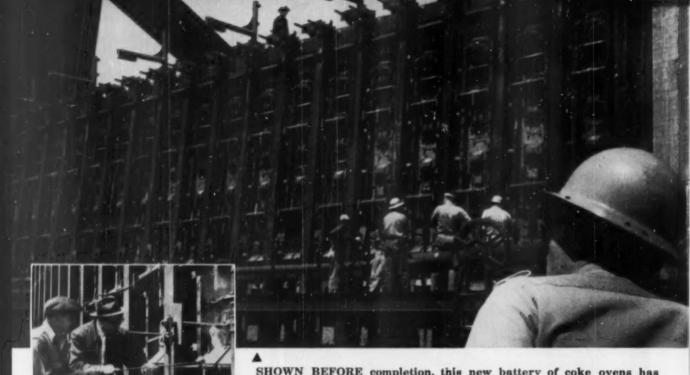
Slide the G-E Thinline into the sleeve. Four screws hold it in place, give you a quick and weathertight installation.



Simple but decorative wood trim frame adds a final touch, Notice how little this 16½<sup>n</sup> unit projects into the room.



Flush on the outside, the G-E Thinline's aluminum grille will keep its smart good looks for years, hold upkeep to the bone.



SHOWN BEFORE completion, this new battery of coke ovens has since boosted Pittsburgh Steel Company's coke production 25 percent.

◀ LIGHTING UP—Lighted taper signals new battery is ready to be warmed up for early operation on a full scale.

# New Coke Ovens, Improved Blast Furnaces Spell More Progress at Pittsburgh Steel



REMODELING—Finishing touches are put on a major job which completes blast furnace modernization program.

Less than 10 months after plans were first announced, Pittsburgh Steel Company increased coke production by 25 percent and finished modernizing its blast furnace capacity.

The first charge of coke came early this summer from a new battery of by-product ovens at Pittsburgh Steel's Monessen, Pa., Works. At the same location, construction crews were putting finishing touches on a blast furnace improvement project which gives Pittsburgh Steel fully modern iron-making facilities.

These two projects are among five in a 15 million dollar expansion and improvement program, the second for Pittsburgh Steel since 1950. The first—the Program of Progress—was even larger at a total cost of 65 million dollars.

Pittsburgh Steel's program places the company in the forefront of a billion dollar a year steel industry growth program. From the 128 million tons of annual ingot capacity at the end of 1955, the industry will grow to 143 million tons at the end of 1958. That's an 11 percent increase in three years. Pittsburgh Steel's 14 percent expansion is to be completed in half the time. Eighty percent of it will be operating at year's end, the remaining 20 percent will be concluded by the end of 1957's first quarter.

A new welding machine for producing heavier gages of wire mesh and fabric began operating in May. Capable of turning out widths up to 96 inches, the new machine sharply diversifies Pittsburgh Steel's welded mesh and fabric product lines. It can handle wires from ½ inch to ½ inch in diameter.

In addition to these three phases, the current program includes a major open hearth project and improvements in the company's primary rolling facilities.

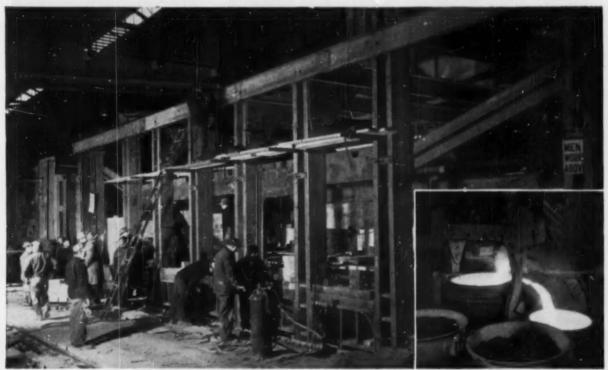
Any one phase—or all of them together—are guarantees to thousands of customers that Pittsburgh Steel is a dependable source of quality steel products in a product range greater now than at any time in the company's half a century of business.

Whatever your steel needs—hot and cold-rolled sheet and strip, cold-rolled coated and plain strip specialties, wire products from merchant trade to fine wire specialty grades, seamless tubular goods—YOU CAN DEPEND on Pittsburgh Steel, the quality of its products, the depth and reliability of its service.

A member of Pittsburgh Steel's nationwide sales engineering staff is as close as your telephone. He's ready and more than willing to discuss your steel needs.



ONLY YESTERDAY—This is the site of the new coke oven battery as it looked only last fall when new modernization program was getting underway. Pittsburgh Steel completed job in less than 10 months.



OPEN HEARTH IMPROVEMENTS MOVED FAST

—Here's the before and after in the Pittsburgh
Steel Open Hearth Department. Above is an open

hearth furnace undergoing extensive remodeling. The inset shows the same furnace pouring its first heat of steel after it was placed back in operation.

# Pittsburgh Steel Company Grant Building Pittsburgh 30, Pennsylvania

District Sales Offices

Atlanta Chicago Cleveland Columbus Dallas Dayton Detroit Houston Los Angeles New York Philadelphia Pittsburgh

Tulsa Warren, Ohio





## removes hard-packed soilage fast operation

This powerful new machine makes it easy for one man to do more

than a 4 to 12-man crew—in cleaning factory floors.

In one operation the husky "Model L" instantly pulverizes bumpy traffic-packed dirt from a path 21" wide . . . and picks it up at the same time. Removes grease-caked soilage, metal chips, oil, rubber and other heavy deposits. Leaves a clean dry surface for trucking. Eliminates all need for water, steam, chemicals or costly hand scraping.

#### Easy to use; operator rides it

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HYDRAULIC CONTROLS regslate speed (1 to 3 mph), tool lift, brush pressure, etc.

6. H. TENNANT COMPANY, 2556 N. 2nd Street, Minneapolis 11, Minn,



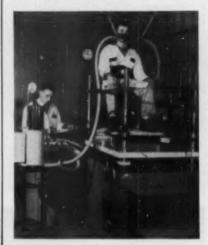
MAINTENANCE

POWER SWEEPERS . FLOOR MACHINES . SCARIFIERS . BOOF SCRAPERS . CONCRETE ROUTERS

planes, and the auto industry with its

styling problems.

Besides the four machines he has sold to Chrysler, he has orders for four more from automotive parts suppliers. He says he feels he has two revolutions on his hands: a rush of monster custom-built machines for the aircraft industry and a potential avalanche of orders if his formers catch on with the auto makers.



### Scientific Hard Knocks

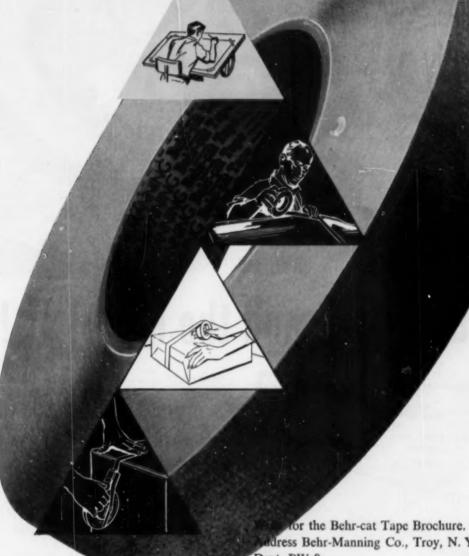
Although he actually isn't going any place, the man above is being taken for a good, rough truck ride. The object is to find how his system likes it. This project in human engineering, known as "operation shakedown," is being con-ducted by the Bostrom Mfg. Co., Milwaukee, makers of truck and tractor seats. The company says it is the first fully instrumented scientific study ever made of the effects of ride vibrations on human beings.

A motorcycle belt around the waist of the rider measures the violence of the wallops he gets from the riding table's action. The tubes in his mouth register his air intake before, during, and after the ride. Preliminary tests reveal a decided increase in respiration rate and energy consumption.

The full schedule of tests, to last two years, will measure the effects of "rides" on vision, energy consumption, metabolism, heart beat, respiration, and body temperature. Specially designed electronic recording equipment will keep track of the movement and pattem the "free rides" take.

Several years ago, Bostrom queried the medical profession on "ride related" occupational hazards of truck and tractor drivers. As a result of this survey, the company developed and introduced last year a line of engineered truck and tractor seats with torsional spring suspension systems that take some of the jolts out of the long hard rides. END

## **EVERYWHERE YOU LOOK...** Behr-cat Tapes are on the job!

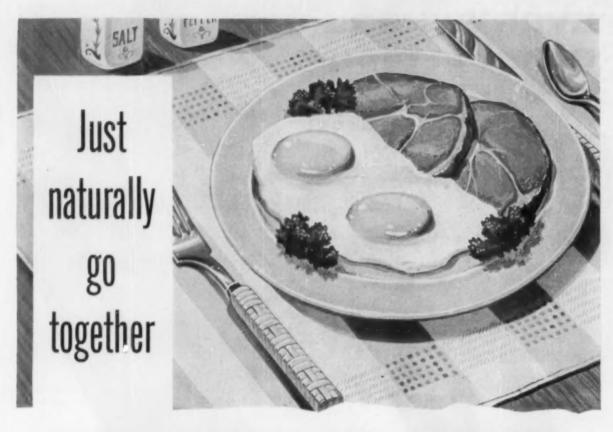


dress Behr-Manning Co., Troy, N. Y. Dept. BW-9.





BEHR-MANNING Co.



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# Shaking Metals Into a Weld

The use of high frequency sound energy-ultrasonics-has imaginatively solved a host of industrial problems in the short span of 10 years. It started as a lab toy. It's now a proven inspection device, it can speed mixing and other chemical reactions, machine "impossible" materials such as diamonds and carbide, and is a revolutionary cleaning aid.

It has been so successful that freewheeling imaginations have boomed ultrasonics for all sorts of impractical and wild schemes-de-smogging the atmosphere, for instance. That's why the latest development-low-temperature ultrasonic welding-has been kept

pretty much under wraps.

Aeroprojects, Inc., the small West Chester (Pa.) firm that will unveil its ultrasonic welding equipment at the Metal Show in Cleveland (Oct. 8-12). basn't talked much. It has been afraid of being flooded with inquiries about using the new welding technique for all sorts of impossible things, such as welding ships or heavy plate-processes for which ultrasonic welding is definitely not practical.

· What It Can Do-Still, ultrasonic welding is creating quite a stir because it is the first really new and different joining process to come along in a long time. It welds without melting, joins dissimilar or reactive metals, and does it with relatively little deformation of

the pieces.

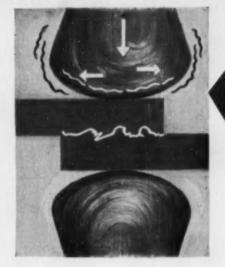
The ultrasonic process makes possible the welding of copper to aluminum-not now feasible-and this will have important applications in the electrical field. Copper and aluminum, being good conductors of both electricity and heat, do not lend themselves to the simpler types of electric resistance and other heat-welding processes. Ultrasonic welding, which involves only moderate heats, avoids this problem.

Another use will be the welding of materials of foil-like thickness to heavy plates, rods, or tubes-something that was a little difficult to do with fusionwelding techniques. Ultrasonic welding of thin pieces of aluminum also has advantages because of the lower heats in-

volved.

The developers of the process say they have encountered no common or exotic metal that could not be welded ultrasonically. They themselves see a promising future for this new technique in jewelry-type welding, such as in fine switches and the putting together of vacuum tube elements. Continuousweld equipment, that could hermetically seal foils for the packaging industry, is also under development.

But the process has definite limita-



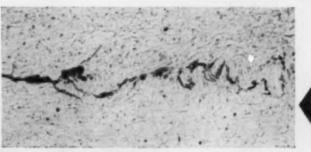
Ultrasonic vibrations from welding head pass through metal strips for several seconds, breaking up

between them.

the interface



Two thin strips are joined with a bond as strong as the base materials



Cross section of the joint enlarged many times, shows a molecular bond similiar in strength to a standard weld

## ...you'll find Thermoid Rubber and Friction Products used everywhere

#### LOGGING



Out where the going is rough, giant loads of logs ride safely on trucks equipped with Thermoid Brake Blocks.

#### LOG DEBARKING



Logs move through ring driven by Thermoid V-Belts as Heavy-duty Hose supplies 1,500 gallons of water per minute at 1,500 psi.

#### THE RESERVE OF THE PROPERTY OF

#### PAPER MAKING



Constant stream of water through Thermoid Wash Down Hose keeps machines and floor free from slippery, resinous pulp ingredients.

#### CHEMICAL RECOVERY



Concentrated black liquor at 240° F. is sprayed into furnace. Thermoid Hose withstands constant flexing action.

## In the Pulp and Paper Industry

... and in practically any industry you can name, Thermoid Products are on the job—delivering what's expected of them. Quality materials and versatile engineering, plus multi-plant facilities and personalized service—all are yours when you specify Thermoid.



Thermoid Company . Trenton, New Jersey

tions. Ultrasonic welding was developed to weld metals of the thickness of foil. Its range has been increased slowly, but only in the thousandths-of-an-inch bracket

 Paying Off—The development of ultrasonic welding is one more concrete indication that ultrasonics in the long haul has paid off—that it is beginning to move out of the lab onto production lines.

Ultrasonics as an industry was born of modern technology's need for good non-destructive testing and thickness-measuring devices. Most of the big advances have come since the war. Today there are probably 25 firms heavily engaged in developing and manufacturing ultrasonic equipment.

• Sound and Energy-Currently, ultrasonics is definitely in the business of soldering metals, cleaning parts, and machining hard substances. This is because high frequency sound is basically just another means of transmitting energy in the form of vibrations.

A radio speaker, for example, is a gadget that turns out vibrations, varying from 20 to 20,000 vibrations—or cycles—per second, that are low enough so they can be heard. Ultrasonic tools are built around use of vibrations that you can't hear. Useful ultrasonic vibrations start where the hi-fi radio speaker leaves off, ranging upwards from 20 kilocycles to 1,000 kilocycles.

• What Happens—Ultrasonic welding makes use of this ultrasonic vibratory energy to weld thin strips of metal. The metallurgical explanation of how ultrasonic welding works is still in the speculation stage, but here's how it works in practice: The two pieces of metal to be joined are clamped between two welding members, or sonotrodes, and high frequency vibrations are induced through one of the clamping members—as in the diagram on page 91. What metallurgists think happens is that the oscillatory motion that's induced breaks up the interface between the two metals, providing intermolecular contact—and making the

The gadgets that actually produce ultrasonic vibrations are called transducers—devices that change electrical energy into the needed high frequency vibrations. There are two types: crystal, or piezoelectric, and magnetic. Crystals change size when you pass current through them. Magnetostrictive metals change size when magnetized.

Ultrasonic welding equipment uses one of the magnetostrictive types of transducers—a stack built-up of nickel laminations surrounded by an electromagnet. Passing an alternating current through the magnet starts the nickel plates vibrating—and you have a transducer.

· Just a Baby-Aeroprojects' ultrasonic



# The Fulton thinking that produced this square of burlap can save you money!

Nurserymen used to buy burlap by the bolt and cut off pieces to wrap around plant roots. In quantity shipments, this by-hand packaging was an expensive bottle neck.

Then Fulton suggested producing burlap squares in standard sizes, ranging from 18 to 54 inches. Sizes were printed on squares to prevent waste. Squares cost no more than bolt burlap. They cut wrapping time in half, save money and material.

Perhaps you too can save many dollars each year with just such a simple packaging short-cut. Remember—our Engineering Service is available at all times to work with you in helping to solve YOUR packaging problems.

Write today, in full confidence, to: Special Services Division, General Office, Fulton Bag & Cotton Mills, 1406 Annunciation Street, New Orleans, Louisiana.

Fulton supplies packaging in burlap...cotton... laminated-waterproof and multiwall paper bags.

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Get Rugged Clear-Span Design; Luxury Look of Stran-Satin with

## New Stran-Steel Rigid Frame Building Line

ew Stran-Steel Rigid Frame buildings have the look of quality never before achieved in an all-steel building. However, quality doesn't stop with appearance . . . it is built right into every part of the structure.

Start with the smart Stran-Satin exterior finish. Stran-Satin metal wall, exclusive with Stran-Steel, provides a strong, durable panel with the weather resistance of zirc-coated steel and the smooth spangle-free look of expensive materials. Peaks, gables and eaves are completely enclosed with smart fascia flashing.

Under this smart appearance is a rugged steel structure. At the peak and knee, the continuously welded Rigid Frame I-section steel plate beams are securely bolted together. And each column is rigidly bolted to the foundation.

Stran-Steel Rigid Frame buildings are clear-span structures available in widths of 40, 50, 60, 70, and 80 feet, and multiples thereof.

Unlimited design possibilities make these buildings ideal for warehouses, factories, retail or service centers. You get the cost-saving features of a pre-engineered structure in a quality building which is durable, fire-safe, easy to insulate and easy to heat.

For complete details, call your local Stran-Steel dealer or send for the new Industrial Buildings Catalog.





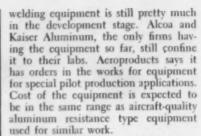
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Aeroproducts has a word of warning; it cautions engineers to keep in mind just what sizes of material ultrasonic welding can handle. The company talks only in terms of welding very thin pieces of metal (.001-in. to .025-in.) to an opposing piece that does not usually exceed 1-in. in thickness. Dissimilar metals can be welded, but must be in the same hardness range.

Continuing development work is slowly pushing up material thickness limits, but only about a gauge (0.006-in.) every six months.

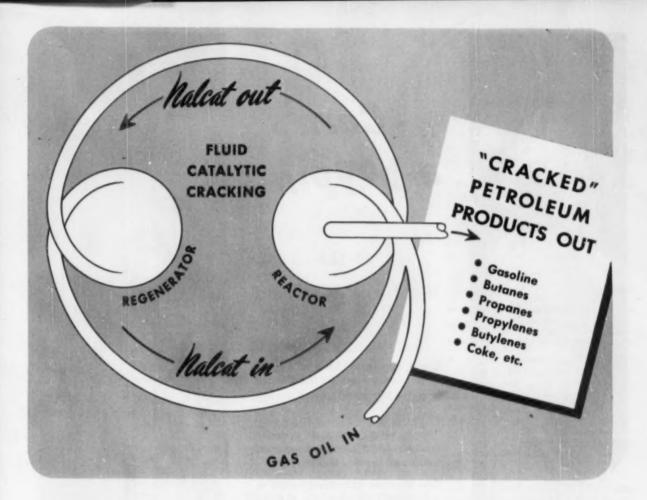
#### PRODUCTION BRIEFS

Interest in fuel injection for passenger car engines is growing. Holley Carburetor Co. has obtained license rights to a system developed and sold abroad by Joseph Lucas Industries of England. The Lucas system has been used on Jaguar racing cars, among others. Holley sells carburetors to Ford Motor Co.

The most powerful shipborne radar set yet to go into service has been installed on the cruiser Northampton, a Navy command vessel. Heart of this big set is a magnetron, developed by the Westinghouse Electronic Tube Division, that will produce over 10-million w. at peak power. With this equipment the Northampton can search out planes 400 miles away.

Scientific instrument users can now obtain service and repair policies similar to those purchased by television set owners. Chicago Apparatus Co. will perform preventative maintenance and make immediate emergency repairs at no extra charge. The plan is designed to give protection against breakdowns in highly complex equipment controlling thousands of dollars worth of production.

The world's largest cold forging machine, a 1½ in. Boltmaker, is being made for Cleveland Cap Screw Co., Cleveland, by National Machinery Co. The 196-ton monster stands twice as high as a man, is 22 ft. long, and costs \$400,000. It will turn 1½ in. steel rods into giant cap screws 1½ in. in diameter, 10 in. long, that weigh 5 lb.



## Catalytic MERRY-GO-ROUND Produces High-Octane Gasoline

• Chances are great that the gasoline in your car is all, or mostly, a product of fluid catalytic petroleum cracking—a continuous process by which gas oil in contact with hot catalyst is cracked into gasoline and useful by-products at high rates and high efficiency.

Catalysts in these processes are used over and over—literally a high-temperature, high-speed merry-go-round that requires physical ruggedness as well as chemical precision in their make-up. Nalcat Fluid Cracking Catalysts are actually tiny, microscopically-porous spheres, made to exacting specifications, and having relatively tremendous surface area for most efficient catalytic action.

Nalco's Catalyst Division is one of the three leading producers of cracking catalysts and operates plants both in the Midwest and on the Pacific Coast.

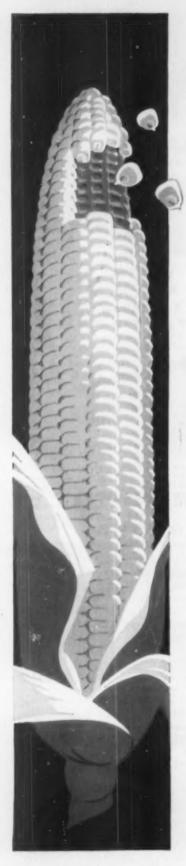
Nalcat performance and acceptance are a good symbol of Nalco Products in general . . . Better products, as promised, when promised.

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# Corn's a-hoppin

on the Western Maryland

Corn picks up its heels in a hurry as it hustles over the lines of the Western Maryland toward the sea.

People in foreign lands enjoy such "maize flour" treats as *polenta* and *mole*, just as many Americans relish corn pone or spoonbread.

The Western Maryland caters to this world-wide liking for corn by moving cargoes of it into—and out of—the towering WM elevators in Port Covington Terminal in the great Port of Baltimore.

Corn by the trainload, like trainloads of coal, limestone, building materials, cement, petroleum products and general merchandise, roll, endlessly, on the WM. And make time doing it.

This prompt movement of freight wins the appreciation of businessmen. Equally appreciated is the friendly, personal attention they find here, from WM people. Both are typical of the road.

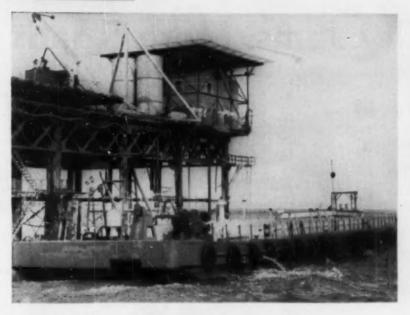
## WESTERN MARYLAND RAILWAY

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#### NEW PRODUCTS



### Oil Warehouse Goes Out to Sea

Offshore oil rigs in the Gulf of Mexico can now get service from a new kind of warehouse. A vessel known as "Mr. George" (right) has finished its shakedown cruise and is ready to deliver bulk drilling mud and various bagged products right alongside the drilling rigs. The barge-like craft is owned and operated by Bariod Div. of National Lead Co.

Mr. George (more formally the George M. Ratcliffe, named after the founder of Baroid) holds 1,500 tons of bulk material, and its automatic scrapers and pneumatic equipment can unload it at a rate of 1,250-lb. per min. As the material is picked up, its weight is automatically registered on tickets that can be used in billing.

While the bulk material is going aboard the rig through a hose, the bagged products can be unloaded from the deck by cranes. This speedup, coupled with the vessel's capacity, helps overcome a major problem of delivering drilling mud to offshore rigs.

A seagoing tug tows Mr. George from its base in New Orleans or Berwick, La., to the rigs. As the two approach the drilling platform, the tug cuts off and the floating warehouse gets into position under its own power. Its two propulsion units as well as the power winches and the unloading gear are all electronically operated by three dieselgenerator combinations that put out

### New Entry in Electronic Printer Race

The race to get an electronic printer capable of keeping up with the output speed of giant data processing machines (BW-Aug.25'56,p87) got a new entry last week. The new system, developed by Radio Corp. of America, is designed to decode about 4,000 electric impulses a minute and turn the information into a photographic record or print it on appropriate business forms.

Although it was developed as an output device for RCA's Bizmac data processing system, the new equipment can be modified to print information from other large systems. It can be fed data from many different sources, including magnetic tape, perforated paper tape, and manual keyboards. Here is how it

· The electric impulses are translated into words and numbers on the luminous face of a tube called a Com-

· A 35-mm. camera records the 10-in. face of the Compositron and the film is processed at the rate of 10 ft. per sec. Each frame of film can hold about 8,000 characters.

• Business stationery headings (such as letterheads, invoices, and financial statements) can be recorded on the film simultaneously with the informa-

· Printed documents are turned out from the film at a rate of 40 per min. (for the 81 in. by 11 in. size). An RCA Electrofax dry-process printer does this job.

A special pullback mechanism makes it possible to get several copies of a single film frame.

#### Air-Conditioned Tractor

You don't have to be a gentleman farmer to keep cool and get the crops in at the same time. A new, experimental, tractor is completely air conditioned to make plowing a pleasure on even the hottest days. For spring and fall jobs, the operator can flip a switch to get a heating unit into action.

The new machine is built by Cockshutt Farm Equipment, Inc., of Irvington, N. Y. As an added feature, in case you miss birds' songs inside the steel and glass cabin, there is a push-button

#### NEW PRODUCTS BRIEFS

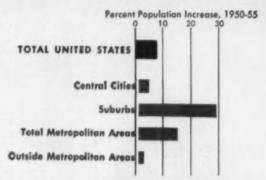
A two-way electric timer that automatically switches over to spring operation in case of power failure is being manufactured by Industrial Timer Instruments Co., Chicago. The unit, which runs on an extremely accurate synchronous motor, can be used for controlling such things as heat-treating processes, outdoor lighting, or research jobs.

Airless spraying: A new unit manufactured by Resistoflex Corp., of Roseland, N. J., does spray painting and other spray jobs without using compressed air. Instead, the material to be sprayed is heated and put under pressure so that when it comes from the nozzle it atomizes and has enough force to carry it to the work surface. In general, pressures of 500 psi. to 600 psi, and temperatures of 160 F to 180 F are used.

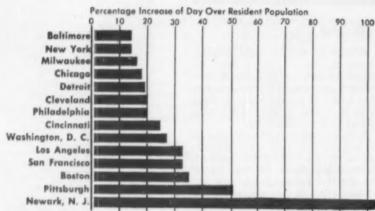
Phenolics, the material often used in telephone handsets and other appliance parts, can be colored by a new finish developed by Rexton Finishes, Inc., of Irvington, N. J. The process, which uses Bakelite epoxy resins, is said to be cheaper and more permanent than most others used today. It also does the whole coloring job in a one-step process.

Dizzy living: A house in New Albany, Ohio, has a second-story room that revolves on a circular track to follow the sun or breeze. The installation's motor can be set to track automatically. The major components that give the 18-ft. by 18-ft. room its mobility will soon be made available in kit form by Agri-Tect Co., of Johnstown, Ohio. For \$1,500 you get a track, motor, circular staircase, and all needed wiring.

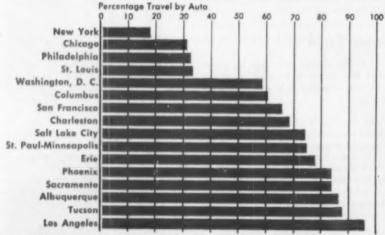
# Cure for City Jams: More Roads



### Cities grow steadily - particularly on fringes . . .



### . . . That means more workers going downtown .



#### . . And most of these commuters travel by car

Data: The Breakings Institution.

@ RUSINESS WEEK

The biggest problem in a modern city is to move people around. Only 4% of the people in our major cities live within a mile of the central business district, but 30% of them work there. For city planners, traffic officers, downtown employers and increhants, the dilemma is twofold:

 How to get people to work and home again without paralyzing other traffic.

How to pay for doing it.
 A new book by Wilfred Owen (The Metropolitan Transportation Problem, The Brookings Institution, Washington) summarizes a broad study of this problem in a way that's bound to stir up controversy. For it flies in the face

of accepted theory among transportation experts that the only solution is to lure or force people to leave their cars home and use public transit.

 Highway Slant—Owen's book grows out of long study of automobile travel. He has written or collaborated in three previous books on transportation, with emphasis on highways. He was technical consultant to General Motors Corp. in its national Better Highways essay contest in 1953, and he estimated transportation requirements for the Twentieth Century Fund's latest edition of America's Needs and Resources.

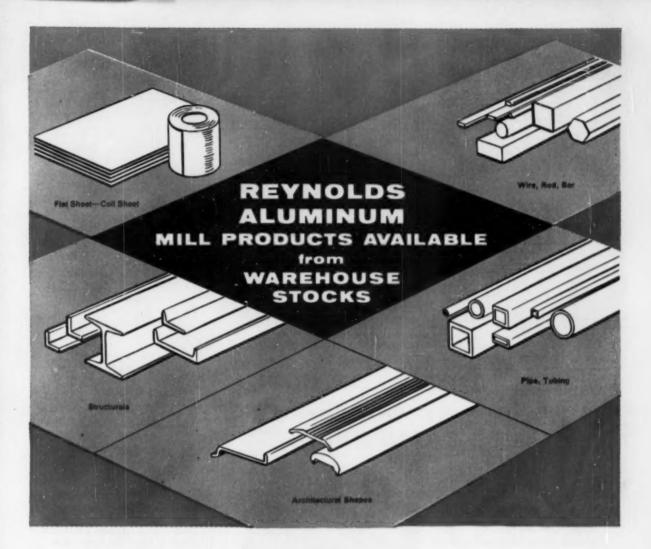
According to Owen, the key to city planning is recognition of the fact that the automobile is here to stay as the primary means of transportation within urban areas. He sees no chance of restoring any significant volume of such traffic to trains or subways, though he sees hope for buses.

 Withering on the Line—Mass transit systems based on rails won't be replaced entirely in large cities, Owen says, but their patronage will continue to decline regardless of any foreseeable effort to build them up.

Even the subways will be outmoded in the long run, says Owen, by such developments as moving sidewalks and cars mounted on conveyor belts. According to a footnote, "The chairman of one transit commission foresees lightweight jet-propelled roller skates for the shorter distances."

Rather than pour more money into the doomed rail services, Owen urges greater emphasis on facilities for buses and autos. One suggestion is to build extra lanes or parallel expressways for exclusive use of business on weekdays and auto traffic on weekends.

 Growing Traffic Jam—There's no hope that the growth of auto traffic will slow down, says Owen. In fact, it will



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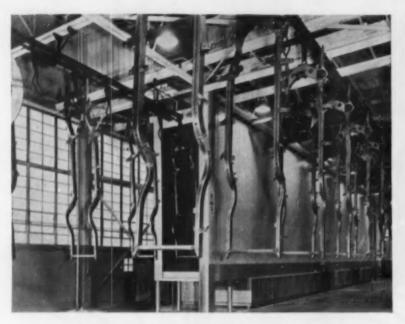
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By the makers of Reynolds Wrap



16-foot frames move automatically on and off this conveyor.

## 300 auto frames an hour

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Running at capacity, this installation automatically handles a million pounds of steel a day, in the form of 16-foot automobile frames. Without human labor, 300 frames an hour are transferred from frame-building lines, lifted, hung on Monoveyor carriers, conveyed through cleaning, phosphatizing, painting and bake



One of two automatic transfers feeding horizontal frame conveyor.

oven, then lowered to a horizontal conveyor and delivered to shipping or storage.

This installation by MHS emphasizes one of our basic beliefs: Human intelligence and skills and strength should be reserved for tasks which add value to the product. Handling should be mechanical and automatic as possible.

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probably accelerate. By 1975, he estimates, there will be a car to each 2.5 persons, compared with a car for every 3.3 persons in 1955—and most of the increase will be in metropolitan areas. By 1975, he expects urban population to increase between 40-million and 52-million, adding about 23-million workers to the traffic in urban areas—with an increasing proportion of them depending on cars. The auto, in turn, is fostering the spread of cities, and city traffic, over wider areas.

"Only a total network of controlledaccess expressways and parking facilities can provide a skeleton that will support the giant metropolis of the future," says Owen. By "total" he means expressways for everything except local trafficcentral terminals for all trucks and buses, off-street parking and loading facilities for all large buildings.

He recommends abandonment of many city streets for auto use and their conversion into pedestrian walks or parks. He would require that commercial building be limited to the capacity of nearby transit or road facilities.

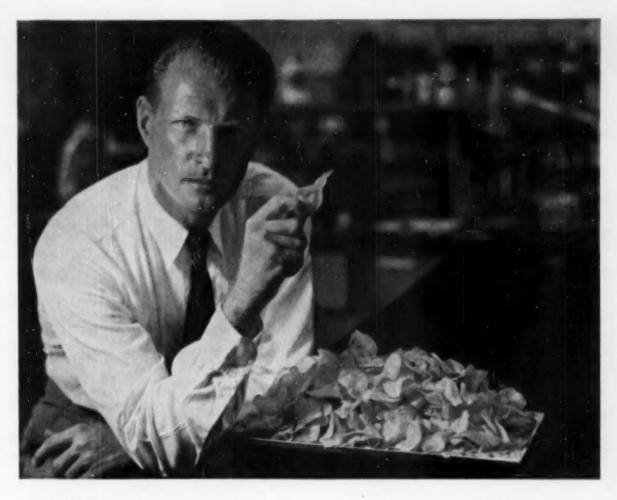
Meeting the Bill-Such total redevelopment runs into staggering costs,
 Owen concedes, but the alternative is a
 paralyzing transportation crisis that
 would be even more costly in the long
 run. Owen says we may as well stop
 kidding ourselves and face up to the
 cost of creating both traffic space and
 better living space within the city
 limits.

According to the Bureau of Public Roads, it would take \$4-billion a year for the next 10 years to make a start toward relieving city traffic congestion. The new federal highway program is expected to contribute more than \$1-billion a year, but more than half the cost will be for local projects that don't qualify for aid.

To pay the rest of the bill, says Owen, cities and states (which funnel funds into a large share of city road costs) will have to raise user taxes sharply—license fees, fuel taxes, etc. In 1955, such charges came to \$55 per vehicle in the U. S., of which only about \$15 went to the cities. If revenues continue to be distributed under the same formula, state user charges will have to triple in order to give cities the money they need.

Cities, of course, are trying to have the allocation formula changed to recognize their relatively higher costs of roadbuilding. They want it based on cost of projects rather than on mileage or population.

More should be paid, too, by users of new facilities, Owen suggests. He wants wider and more flexible use of tolls and parking charges. For example, he would encourage a faster turnover in parking facilities by charging relatively less by the hour than by the day,



# The potato chips you see are inhibited ... but not chemist Frank Wedge

A man called us a year or so ago.

His firm was working on a new line of food preservatives. It seemed that the possible shortage of a key chemical had him worried.

He asked if we could produce this chemical. It would be used, he said, in their new product—an antioxident—to inhibit staleness in foods after packaging. To keep potato chips, for example, fresh and profitable longer. The specifications were exacting.

So we turned Frank Wedge loose on the project. His uninhibited approach to baffling problems has often produced exciting results for us. Frank headed up a Project Investigation Team of chemists and engineers picked for their special experience.

Then, months of teamwork followed. Research and

pilot production. Close work with our customer all the way. The payoff was a chemical which filled the bill in full. Our customer was pleased with the pilot run. Still is, in fact, with Ansul's quantity production.

From this unusual team approach has come Ansul's own quality chemical line, and a unique ability to apply chemistry with a mechanical twist. We have solved problems diverse as fire and ice—Ansul's fire extinguishers and improvements to refrigeration systems are prime examples.

Got a chemical problem?... or a chemical problem that calls for a mechanical solution? Let us tackle the job with chemists, engineers and all the momentum of an alert, aggressive management. Write Ansul Chemical Company, Marinette, Wisconsin.

Ansul: pioneer manufacturer of Fire Extinguishing Equipment, Refrigerants and Mechanical Refrigeration Products, Industrial and Fine Organic Chemicals



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... just a few of the many reasons why users say they "can't afford to be without Towmotor equipment." For full details, call your nearest Towmotor representative ... or write for Job Studies covering your industry. Towmotor Corporation, Div. 209, 1226 E. 152nd St., Cleveland 10, Ohio.

There's only one Fork Lift Truck called TOWMOTOR

TOW MOTOR

America's Best Engineered Fork Lift Truck



# "... we need more regional planning, not more expressway projects . . ."

CITIES starts on p. 98

and expressway tolls could be lower in the off hours.

• Jurisdiction—Owen criticizes the multiplicity of agencies with overlapping jurisdictions for making it hard to do this kind of over-all planning. He urges centralized administration.

Otherwise, he says, even such elaborate plans as the Los Angeles freeway system may be inadequate for the continuing increase in traffic. The Los Angeles project—biggest in the nation—involves building 165 mi. of expressways in 10 years at a cost of \$2-billion. Chicago is building 67 mi. of expressways for \$500-million and is spending another \$100-million on four truck terminal zones.

But an expressway system can work, says Owen, only if all the areas served cooperate in limiting access, staggering work hours, relieving peak loads by an incentive scale of tolls. What we need, he asserts, is not more expressway projects but more regional planning that takes account of all highway and transit facilities, parking and loading

• Getting to the Root—The most drastic of Owen's recommendations—and the one that implies the greatest direct cost to business firms—is his proposed restriction on downtown industrial and commercial building. He wants to limit height and bulk of structures, both to open up ground space and to hold down the number of people who converge on the transportation system at rush hours. As long as New York City, for example, has more miles of elevator shafts than of subway tracks, workers will jam the streets, subways, and buses.

Owen also wants commercial buildings to be set back from the street, so they can load and unload trucks on their own property rather than cluttering the streets.

Actually, Owen declares, potential improvements in transportation (especially intra-city expressways) and in building design have just about made a downtown commercial or Industrial district obsolete. The best modern factories are not unsightly or noisy, don't give off smoke and fumes. They don't really have to be separated from residential areas. In fact, Owen says, pleasant residential districts can be built up around factories or office buildings,

 Dream Cities—Breaking up the commercial-industrial core of the city into a number of living-working districts

climinating much of the need for com-

## How Du Pont Photographic Products Help Solve 3 Tough Problems



#### A 1. CATCHING THE NEWS IN ANY LIGHT

Whether it's an airplane ditching or a night baseball game, the newsreel cameraman has an easier time of it with Du Pont Type 931 High Speed Rapid Reversal motion picture film. It's so fast he can capture every detail, indoors or out—with available light alone! Think how valuable Type 931 can be in your plant for time-motion or production shots. No expensive lighting needed.



#### 2. PRINTING A PICTURE ON A METAL PLATE

Want to make a piece of metal photosensitive? Simple. Just mix Du Pont "DH" emulsion with water, spray it on like they're doing at left, and you're ready to make an exposure.

Many firms use "DH" to print accurate templates on a metal surface photographically for easy stamping and cutting. And coatings can be applied on a wide variety of surfaces, regardless of size, shape or flexibility!

## 3. "LOOKING INTO"

With the help of an x-ray examination, a plant physician can determine immediately the extent of an on-the-job injury, and thus avoid needless loss of manhours due to complications.

More and more companies are turning to dependable Du Pont x-ray film because it has the good contrast and fine definition that helps assure an accurate diagnosis.

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casily accessible to a master expressway, Owen points out, would minimize the need for trucks to come into the downtown district. Central truck terminals, spotted among the living-working centers, could save a lot of delivery and loading time. With less traffic downtown, many business streets could be converted exclusively to pedestrian use, and downtown shopping might actually increase.

Owen's chapters on this plan are sure to touch off controversy. As one city traffic expert expressed it when asked about the idea of the streets for pedestrians only: "He's crazy." Some city planners who have seen the study are equally scornful of other ideas—for example, the dispersal of business and industrial buildings in living-working districts. People don't necessarily live, or want to live, near their work, one man said.

He also questions if city governments are so all-wise that they can accurately stipulate how much building is warranted by transportation capacity or where a factory should be placed in the outskirts.

Owen, however, argues that relocation of business activities, even on so large a scale, is not too visionary. We are rebuilding cities anyway, and doing it fast, he says. At the present rate of building, he figures enough new structures will be put up in cities in the next 25 years to rehouse all of the people and all of the commercial, industrial, and cultural enterprises that are now in metropolitan areas.

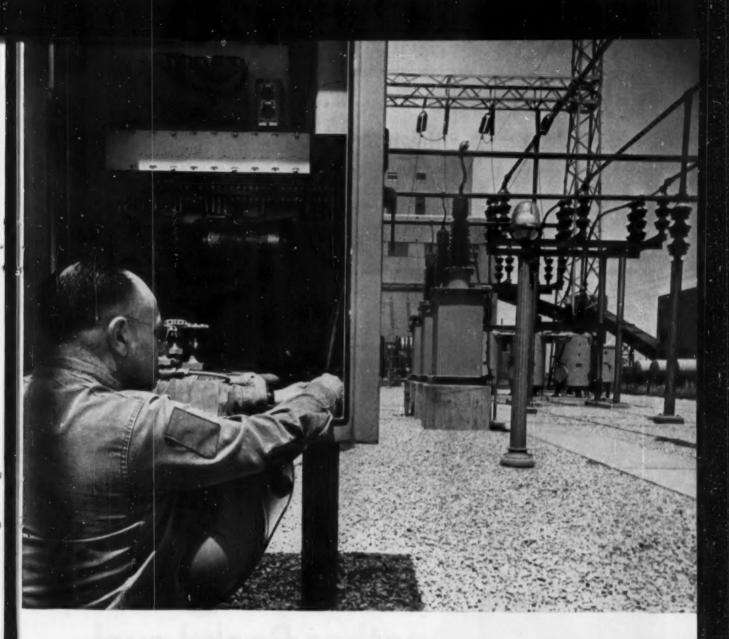
The question, he says, is whether we put these new buildings where they can best be served by modern transportation or whether we continue to build them where they'll add to the traffic jam.

#### **REGIONS BRIEFS**

The State of Ohio lost a round in its long fight with Riss & Co., big trucking line (BW-Jun.25'55,p170). An ICC examiner recommended in a 45-page opinion that ICC reject the state's effort to take away the company's certificate because of traffic and safety infractions. He said the violations were not very serious.

Alabama voters last week turned down, 2 to 1, a constitutional amendment to increase the state's corporate income tax (BW-Aug.11'56,p155).

The demonstration monorail line at Houston (BW-Feb.25'56,p28) will be dismantled and moved to Dallas in time for the state fair, opening on Oct. 6. Under a six-yr. contract, it will operate over a 4,000-ft. route with three stations; fare will be 25¢.



### Niagara Mohawk's formula...add power...and grow

Western New York was stretching its muscles. But to grow, like many other areas, it needed electrical power.

That's where Niagara Mohawk stepped in with its formula for community growth . . . a 204,000 kw steam plant at Lake Erie waters' edge . . . all the power the area needed. One of the most modern in the world, the Dunkirk steam station is wired with Rome thermoplastic control cables.

Why Rome?

For many good reasons. First of all, long-time dependability. Also, Rome thermoplastic control cables are easier to install, handle, strip, and splice. They have a high-gloss, friction-free surface which facilitates pulling into conduit and control cabinets. They are small in diameter permitting neat installation, saving space and materials.

In the case of Dunkirk, individual

conductors are insulated with RoLene (polyethylene) unaffected by water absorption, electro-osmosis, and low temperatures . . . conditions which often cause service interruptions. The outside sheath is of Rome Synthinol®, tough and long wearing, providing exceptional resistance to moisture and corrosion, abrasion and flame. They may be buried direct in earth, installed in ducts, trays, racks, strung aerially . . . or run in circuits combining all four. They are recommended for operating temperatures up to 75° C.

Because of its Dunkirk experience, Niagara Mohawk was quick to specify Rome thermoplastic control cables for its subsequent Albany steam station, near Albany, New York.

The ability to produce cables for tough operating conditions, where the utmost in dependability is required, is a hallmark of Rome Cable . . . good reason for letting Rome Cable engineers serve you whenever you have a wiring problem. Rome Cable Corporation, Rome, New York; Torrance, California.



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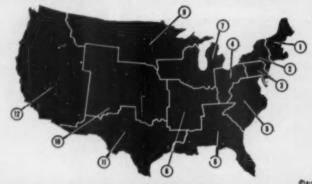


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### The Income Pattern: Business Week's Regional Income Indexes

#### U.S. Incomes: Up 6.3% From Last Year



CAUSINESS WEEK

Federal Reserve District	% Change vs. year ago	The Indexes		
		June 1956	May 1956	June 1955
1. Boston	+5.0%	272.3	270.0	259.3
2. New York	+7.2%	284.5	283.6	265.5
3. Philadelphia	+6.3%	291.1	288.9	273.8
4. Cleveland	+10.4%	342.1	339.5	309.9
5. Richmond	+5.7%	354.6	355.9	335.5
6. Atlanta	+7.8%	438.1	432.7	406.5
7. Chicago	+4.8%	344.0	341.5	328.3
8. St. Louis	+2.7%	319.0	323.9	310.5
9. Minneapolis	+6.2%	349.0	345.2	328.5
10. Kansas City	+4.0%	402.3	397.0	387.0
11. Dallas	+7.8%	481.0	484.4	446.1
12. San Francisco	+6.7%	385.3	384.2	361.2
Nation	+6.3%	342.1	340.6	321.7

1941 = 100; adjusted for seasonal. June figures preliminary;
May revised.

### **Another Peak Level**

U. S. incomes in June, 1956, reached their fourth successive high. They were 6.3% above the year-ago level, according to ausiness week's Composite of Regional Income Indexes. For the 12 regions, gains over last year ranged from 2.7% in the St. Louis region to 10.4% in Cleveland. That brings to 11 the number of consecutive months that Cleveland was top gainer in the year-to-year comparison. The steel strike will keep it from going to 12 in July.

During June, the nation's incomes rose 0.4%. But three of the 12 regions suffered declines in the month-tomonth comparison. They were St. Louis, Dallas, and Richmond. Largest May to June increase was 1.3%—chalked up in Kansas City.

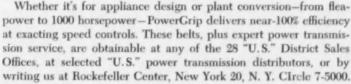
• Record Incomes—As of June, in-

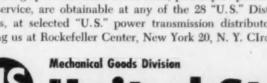
 Record Incomes—As of June, incomes in all regions were either at peak levels or close to their record highs. Comparison of the June level with record levels shows the following declines: Boston 2.0%; New York 1.7%; Richmond 0.4%; St. Louis 1.5%; and Dallas 0.7%. All-time highs were reached by the last three in May, but you would have to go back to December to find the peak incomes for Boston and New York. The North and East are, of course, the regions that are growing slowly as the South and West outstrip the rest of the nation.

• Leaders—Since the end of 1955 the largest increases in income have been in Minneapolis, San Francisco, Dallas, and Atlanta—in that order. Minneapolis was up 6.7% during the first six months this year; Atlanta, 4.4%. The income increase for the nation as a whole was 1.9% in this period.



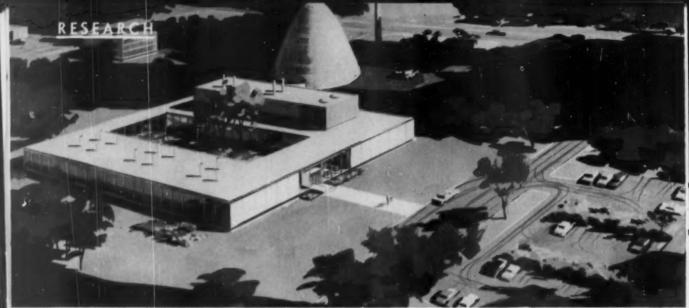




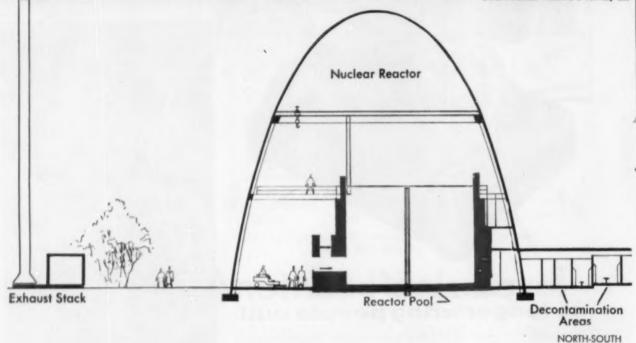




**United States Rubber** 



Data: American Machine & Foundry Co.



## Industry's Atom Research Quits

By the middle of this month, the U.S. will get the surest sign yet that nuclear energy research in industry is coming out of its infancy.

coming out of its infancy.

Two events will mark the beginning of a new phase of industrial research:

First—within two weeks—American Machine & Foundry Co. seems likely to get official O. K. from the Atomic Energy Commission for its reactor-building subsidiary, AMF Atomics, Inc., to build a nuclear reactor for industrial use.

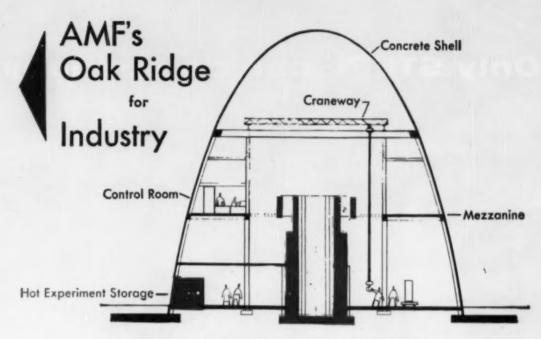
Next—on Sept. 19—a committee that forms the nucleus of AMF's new cooperative nuclear research venture, its "Oak Ridge for Industry," at Plainsboro, N. J., (above) will appoint a board of directors to run the center.

Cooperation is the theme all the way: The board of directors will be made up of one man from each of the 10 companies that will share the center.

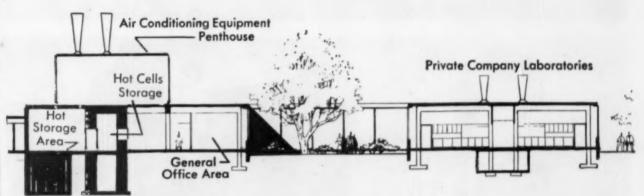
For two years, AMF has been trying to set up this cooperative deal to handle some of the atom's power for peace. Early last year it was sufficiently sure of success to buy the ground at the center's New Jersey site. By early in 1958 it expects the center will be operating.

On Sept. 19, when the 10-man board is set up, companies that have for years been trying to evaluate the impact of nuclear research on their corporate futures will finally get their first real chance to begin nuclear research programing of their own.

• Costs & Promise-It's only reasonable that industry should have taken



EAST-WEST SECTION THROUGH REACTOR BUILDING



SECTION THROUGH REACTOR - LABORATORIES

## the Diaper Stage

time to reach this point. In these days of high capital goods costs, few in industry have been prepared to put out money for expensive reactors, laboratories, and all the other gear of nuclear research. They've all heard the claims that nuclear research will give industry new manufacturing methods, new products, and new wealth, but high investment costs have kept them from buying all the equipment that's necessary.

• Participants-It was partly on the basis of its cost-splitting appeal that

AMF sold its cooperative research center scheme to industry. The reactor will cost more than \$1.5-million. But that tag will be split among the cooperative group, which, besides AMF itself, consists of: American Tobacco Co., Atlas Powder Co., Continental Can Co., Corning Glass Works, National Distillers Products Corp., National Lead Co., Radio Corp. of America, Socony-Mobil Oil Co., and U. S. Rubber Co.

Each of these firms will staff its own laboratory, and they're not saving how

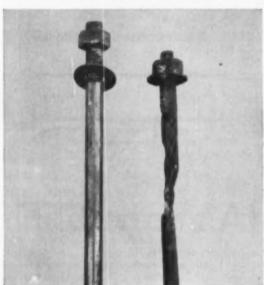
much money they will put into this. Each will also be represented on the board of directors—by a research director or some other company representative—and thus will get a say in operation of the reactor.

The reactor itself is a conventional swimming pool type: It will be surrounded by water that will act as moderator, cooler, and shield. Its uranium fuel will come, by lease, from the Atomic Energy Commission.

University Men—New York's Columbia University has been chosen to operate the reactor—according to the policy set down by the 10-man cooperative board.

Basic management problems, how-





Which Rod is Made From Steel? The answer is—they're both steel! The carbon steel rod at the right lasted only six months in the highly corrosive atmosphere of a chemical plant. Of course, like many other metals and materials, carbon steel just wasn't meant for this kind of treatment. This was the job for a special steel—USS Stainless Steel. The Stainless Steel rod at the left has been in service in the same corrosive atmosphere for 5 years, and it's still in perfect condition.

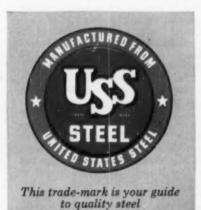


Keep America Beautiful. It's the duty of every man and woman to protect our land from the inroads of those who would spoil and deface the countryside. You can start in your own front yard with a vigorous cleaning and planting program—and the job is easier when you use sturdy tools made from tough steel. Remember too, you can help keep our highways, beaches, and parks clean by disposing of trash in a proper receptacle—wherever you are.



All-Steel Pool Won't Crack, That's right. It's a prefabricated swimming pool made entirely from rust-resisting, copper-bearing steel. US Steel's American Bridge Division can install one for you in just about any shape or size. The steel sections are permanently welded watertight; and this pool will not crack due to freezing or frost action.

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The Steel Scorpion. This is a mobile drilling platform designed for off-shore oil exploration. It was christened the "Scorpion," and is now busily probing the bottom of the Gulf of Mexico. The all-steel structure accommodates half a hundred men, and it has over half an acre of deck space. Oil Well Supply Division of United States Steel

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"... nuclear scientists have long talked about sterilizing and preserving food by radiation ..."

STORY starts on p. 110

ever, will essentially be solved by the center's 10-man board of directors. One such problem: How to ensure that each company can perform its experiments under conditions that will protect its own discoveries.

#### I. What They'll Get

It's plain that the 10 companies are expecting plenty of profitable discoveries to ensue from their cooperative venture. They were selected from a large group from many different industries, all eager to have a share in such a center.

Each of the 10 is now planning research it wants to do as soon as the center is ready for operation late next year or in early 1958. And these are some of the particular projects they're likely to start on as soon as they can:

Food preservation: Nuclear scientists have long talked about the possibility of sterilizing and preserving food and agricultural products by radiation (BW-Jan.28'56,p174). Already they have proved that radiation can partially or completely eliminate the chief cause of food spoilage by destroying the reproductive ability of microorganisms, which make good "go bad."

Food companies aren't the only ones vitally interested in this field of nuclear research. Packaging outfits—like Continental Can Co.—see this field of research opening up new methods, radical changes in design and production of

food containers.

Chemical companies—like Atlas Powder Co.—which already make products used to retard food spoilage, have a stake in this research, too. Among the compounds Atlas makes are monodiglycerides. These are used to retard spoilage of bread. They're effective—but not for long when compared with what can be done by radiation. Bread treated by radiation stays fresh for weeks. Nuclear researchers have been getting similar results when they radiate potatoes, meat, and various other foods.

Production control: Radiation can be harnessed in a score of different ways to help monitor production processes automatically, too. It can measure the density, viscosity, absorption properties of materials, check the strength of metal parts and welds. It could be that within a few years, the uniformity of a wide range of products—from light bulb filaments, to dves, to fiber combinations—

# Admiral. lends a hand to the Atomic Airplane

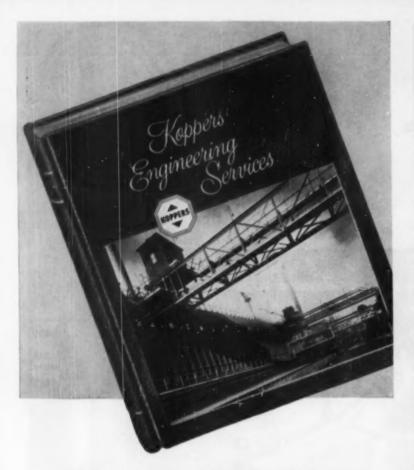
#### Special laboratory built to study radiation effects

The flight date of the first atompowered airplane may well be
advanced as the result of a study
being conducted by Admiral for the
U.S. Air Force. The problem is to find
out what happens to electronic control
equipment when exposed to nuclear
radiation. Admiral has constructed a
special laboratory to make this study.
Robot hands manipulate radioactive
electronic parts inside "hot cells"
shielded by 30 inch walls of high
density concrete. The laboratory also
contains a gamma radiation source
as powerful as some atomic reactors.

Admiral Corporation, Chicago 47

this is Admiral

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CHEMICAL ENGINEERING SERVICES "... drug companies have tinkered with the idea of sterilizing medical supplies by irradiation . . ."

STORY starts on p. 110

can be controlled by a practical application of discoveries made in nuclear research.

Plastics, synthetics production: Researchers in this field are already using radiation as a catalyst in the production of polyethylene. In this, they're opening the way to a new manufacturing method, for if production can be done at low temperatures and low pressures, industry can bypass the need for some large and expensive plant equipment. The researchers have found, too, that radiation hardens plastics, helps make them resistant to heat.

Many production problems will have to be solved before irradiation techniques can be applied to plastics and synthetic materials on any large scale. Potential producers like National Distillers, however, are bound to use the AMF "Oak Ridge for Industry" to help them solve these problems.

Among other products the researchers will hunt for at the reactor center are likely to be a whole new line of synthetics that may answer the demand for heat-resistant construction materials (BW-Jul.21'56,p83).

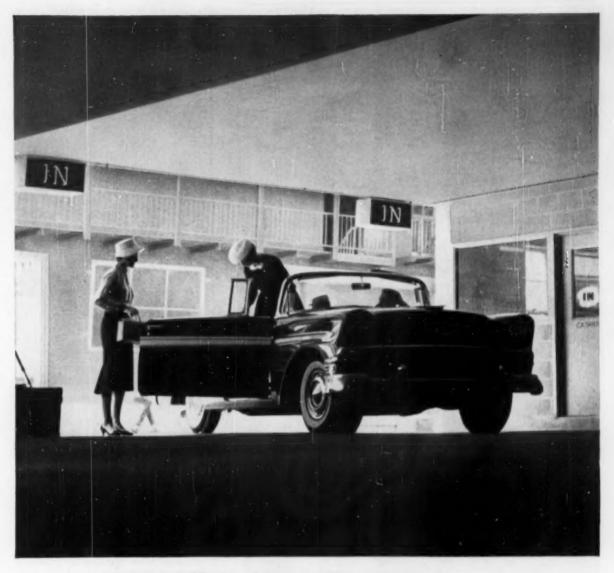
Agricultural research: Researchers in this field have already tried radiation as a weapon against crop pests and as a booster of crop growth and seed production. They have found that irradiation of the seeds of grain crops, fruit trees, and peanuts increases both the yield and the disease resistance of these plants.

There's probably more immediate opportunity for research in this field than in any other. And it's likely that such an outfit as American Tobacco Co. will press this research at the AMF center.

Medical research: It's unlikely that the AMF reactor will be used for pure medical research—but it's a good bet that companies with an interest in medical equipment and in drugs and pharmaceuticals will use the reactor to find new production methods.

One of the new methods developed could be the cold sterilization of drugs, such as antibiotics, that are sensitive to heat. The goal is to sterilize such drugs by irradiation, which does the job without heat.

A number of drug companies have tinkered with the idea of sterilizing many different medical supplies by irradiation—just about everything from hormones, to sutures, to gauze bandage. These outfits realize that sterilization by irradiation could save time, equip-



## How Buffalo found the answer to downtown parking problem

With traffic volume steadily growing, downtown Buffalo has been plagued by the same congestion and scarcity of parking space that has beset other large cities—and with the usual result, that business has tended to migrate to outlying areas.

The Parking Board of Buffalo pondered this universal problem and came up with an idea that approached the problem in an original way. Under the Buffalo Parking Plan the city would acquire sites for off-street parking and build the garages, then turn them over for operation to a non-profit corporation formed by downtown stores, banks, and property owners, the city retaining supervision as to rates, etc.

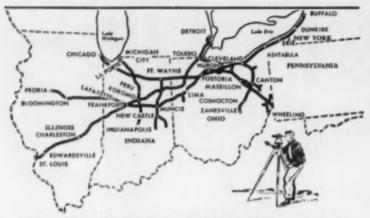
Special merit of the Buffalo Plan is that it lets the city's power of condemnation and high credit rating help in providing parking spaces, with operation remaining in private hands, and parking charges held as low as possible.

Three large garages and a market with intermediate level roof parking have already been built. Bethlehem Steel supplied the steel reinforcement for all four structures, the 2300 tons of concrete reinforcing bars being rolled at Bethlehem's Lackawanna plant, right next door to Buffalo.

The new facilities can park a combined daily total of almost 6000 cars. This added off-street parking space is doing much to make it easier and pleasanter to shop in downtown Buffalo. Additional new parking space under the plan is in the offing.

BETHLEHEM STEEL





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started, how fast it traveled, when it stopped, idling time and distance between stops. Humi-nated dials on the face of the tamper-proof aluminum case show the time of day, miles per hour or revolutions per minute, depending upon type of instrument installed, and total mileage. A red light also warns driver whenever your company's predetermined speed limit is exceeded. Use the coupon below to send for your free copy of Wagner Bulletin SU-3—it tells the whole Tachograph story and there is no obligation,

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ment, and manpower in their plants. It could also mean that many medical supplies would be kept safer from con-

There's the possibility, too, that medical researchers, working with radiation, will some day be able to synthesize certain drugs that have so far resisted production in the test tube.

All these fields of research are likely to get close investigation at the AMF center. But they are only some of the major, immediate programs for the researchers. They're sure to follow hundreds of other lines of research into what radiation can do for industry,

#### II. Big Step Ahead

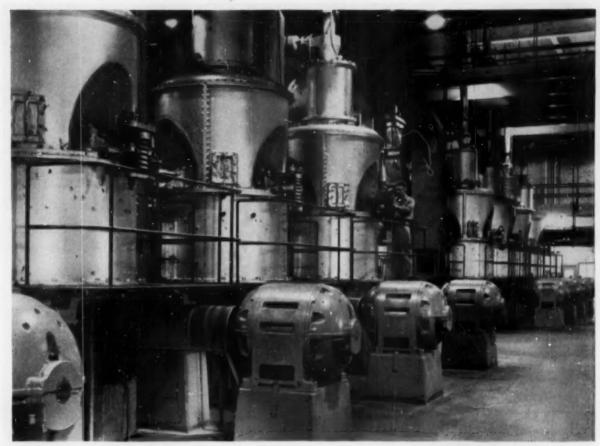
AMF's nuclear research reactor won't be the only research reactor open to industry in the country.

The Armour Research Foundation's reactor (at the Illinois Institute of Technology) is currently engaged in a three-year exploratory research questsponsored by 24 companies from a variety of industries. Each of these firms has contracted to pay \$20,000 apiece to share in the benefits of a program that they themselves helped to plan. But Armour does the research itself; unlike the AMF set-up, the companies in this venture can not engage in their own nuclear research projects.

A few companies, like Esso Research & Engineering Co., also have working arrangements to conduct radiation research projects at institutions that have nuclear reactors operating. Esso is doing its radiation research at Battelle Memorial Institute. Its contract with the institute calls for a study into uses of atomic energy applications in the oil industry. This work will expand studies that have already shown that gasoline and other petroleum products can be produced from crude oil by means of gamma radiation, instead of by the long and costly process of catalytic refining. · Big Fees-For its nuclear experiments, Esso will pay Batelle \$250,000 a year for three years.

Other outfits, such as Sterling-Winthrop Research Institute which is involved in development of drugs and pharmaceuticals, have contributed capital costs for construction of nuclear radiation research facilities at colleges or universities-on the understanding that they can use the facilities for their own research from time to time.

AMF's center, outfitted with its own reactor, should be a big step ahead of these working arrangements between industries and institutions. And the eager demand of the several score companies that sought space at the center, which could accommodate only 10, is a hint that in the next few years industry might set up a series of similar cooperative ventures. END



Battery of C-E Raymond Bowl Mills

#### 20-foot high "coffee grinder" for coal

Towering 20 feet or more above the floor, huge C-E Raymond Bowl Mills like those shown above do essentially the same kind of a job as Grandma's coffee grinder, except that they grind much finer — reducing coal to about the consistency of flour — and it takes as much as 500 horsepower to turn them. Another difference is that they operate 24 hours a day, month in and month out, to supply the insatiable fuel appetites of many of the country's largest power station boilers.

More likely than not the electricity that made your percolator perk this morning came from a power station equipped with C-E Bowl Mills, for pulverized coal accounts for nearly 70 per cent of the nation's fuel-generated power and the C-E Bowl Mill is the country's most popular pulverizer. Just to give you some idea of how

much coal these mills pulverize, their annual output would fill 3,330,000 railroad cars — a train long enough to encircle the earth.

The nation wide — and in fact, world wide — acceptance of the Bowl Mill is primarily due to its unique grinding principle which assures low power and maintenance costs and superior operating features. But it is also a reflection of the fact that C-E pioneered pulverized coal firing way back in the twenties and equipped the first power station in the world to be designed for the use of this fuel.

Whether your steam requirements can best be met by coal, oil, gas, or any of a number of special fuels — and regardless of the type or size of boiler you need — the C-E line of fuel burning and steam generating equipment can supply just the right installation for your needs.

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### In Research

#### Radioactive Reserpine May Cure Some of Tranquilizer Drug Headaches

Reserpine, a drug produced from Rauwolfia and one of the leading tranquilizers (BW-Sep.1'56,p32), has been produced in a radioactive form at the Argonne National Laboratory at Lemont. Ill.

This means that researchers can now trace the physiological and biochemical action of the tranquilizer in its chemical pathway through the body. This will add materially to controversial medical knowledge of such drugs. Columbia University will pioneer these biological studies.

The radioactive reserpine was produced by growing young Rauwolfia plants in small, hermetically sealed greenhouses in which the atmospheric carbon dioxide was enriched with radioactive carbon dioxide. The research was done by Edwin A. Peets and Dr. Arthur Schulert of Columbia's Lemont Geological Observatory, and Dr. John Skok and William Chroney of Argonne's Biological & Medical Research Div.

## "Accident" May Provide a Clue To Immunization Against Radiation

Frenchmen at the International Society of Hematology meeting in Boston last month threw new light on the possibility of immunization against nuclear radiation. The discovery, they reported, came accidentally through a study of leukosis—a pre-leukemia condition.

The scientists noted that when blood withdrawn from leukosis victims is irradiated then reinjected into the blood stream, there is a noticeable change in the patient's condition. Sometimes the irradiated blood makes him worse, sometimes better.

To test their discovery, they injected dogs with their own irradiated blood and stumbled on the fact that animals, when prepared by a series of such irradiated blood transfusions, resist total body irradiation in lethal doses.

## Scientists Tie Mental Diseases To Faulty Molecular Chemistry

Scientists headed by Dr. Linus Pauling set out this week to explore a relatively new field—the molecular chemistry of mental disease. Ford Foundation is underwriting the program for a 5-yr. period to the extent of \$450,000.

Basis for the investigations, according to Dr. Pauling, is "the probability that many causes of mental deficiency—perhaps most of them—are the result of gene-controlled molecular abnormalities."

Dr. Pauling has been chairman of Cal Tech's Div. of Chemistry & Chemical Engineering since 1937. In 1954, he was awarded the Nobel Prize in Chemistry.

According to Pauling, his team will attempt to uncover basic principles, rather than attack specific practical problems. The term "molecular disease," he says, is to be applied to disorders that result when genes—the fundamental units of hereditary—cause an individual's body to manufacture abnormal instead of normal molecules. An example of a molecular disease is sickle cell anemia, a serious affliction for which so far there is no effective treatment.

Pauling believes that thousands of other diseases, including mental diseases and cancer, could be molecular diseases, too, and that many of them involve abnormal enzyme molecules that are prevented—because of their abnormality—from carrying out their vital role of catalzying chemical reactions in the body.

#### Radioactivity Becomes a Tool In Study of Heart Diseases

Radioactivity is giving a fillip to the study of heart disease. New techniques were described at last month's meeting at the International Society of Hematology by Drs. Julian L. and Clara Ambrus—a husband-wife team—and Drs. Nathan Back and J. W. Byron; of Buffalo.

According to the reports, blood clots containing radioactive iodine are produced in the hearts, lungs, and arterics of animals. Various clot-dissolving agents are then tested to see how they act in dissolving the clots. The iodine gives off rays, making it possible to check the precise rate of dissolution.

Human trials, using plasmin—a natural clot-dissolving component of human blood—and other regular bloodthinning drugs are now starting, Dr. Ambrus said,

#### Research Briefs

The Office of Naval Research is sponsoring a symposium on the Technology of Molybdenum and Molybdenum Base Alloys in Detroit Sept. 18-19. Object is to present to researchers interested in materials for high temperatures an up-to-date picture of the possibilities of molybdenum and its alloys.

An Air Force study into the phenomenon of static fatigue and a Navy study of fast crack propagation are now available through the Office of Technical Services, U.S. Dept. of Commerce.

The secret of the structure of proteins has been partially cracked by Eli Lilly biochemists. Studying glucagon (a protein in the pancreas that increases the body's blood sugar) Lilly researchers have proved it to be a single chain of 29 amino acid units, with 15 different amino acids appearing in the sequence. The structures of only two other protein molecules—insulin and corticotropin (ACTH)—have ever been fully described by chemists.



WILLIAM JENNINGS BRYAN was lampooned for his preference for grape juice.



JACK KAPLAN of Welch's engineered a deal called "most fantastic of the decade."

#### MANAGEMENT

Douglas Moorhead, right, adds president of Welch Grape Juice Co. to his job as head of a farmers' co-op. The move comes on top of an unusual deal in which . . .

## Co-op Buys an Industry

In 1913, William Jennings Bryan (cartoon at left), then Secretary of State, startled diplomatic wets by toasting them not with customary wines, but with grape juice-Welch's to be exact. The gesture made Bryan the faddist of the State Dept. and the butt of cartoonists. But grape juice caught on as the "fashionable drink."

• "Deal of the Decade"-Last week a lot of people were toasting one another in grape juice-Welch's. Chief among them were Jack M. Kaplan (left) and Douglas Moorhead (right), outgoing and incoming presidents, respectively, of the Welch Grape Juice Co. The occasion was what the food industry was calling "the most fan-tastic deal of the decade," and what agricultural experts were terming "the most important event of the decade in agriculture."

For last week, the 87-year-old Welch company officially was sold for some \$29-million to the 4,694-member National Grape Cooperative Assn., headed by Moorhead. It marks the first time a farmers' co-op has been able to buy out the multimillion-dollar leader in its industry (BW-Sep.1'56,p91).

Grape growers thus accomplished in one swoop what other co-ops have tried to do in slow, often painstaking, steps -obtain marketing security for them-selves. Some co-ops, like Florida Citrus Mutual, are purely promotional; others, including several dairymen groups, are marketing co-ops; still others, such as California Packing Cooperative, have built themselves into leading processors with brand names. In Calpak's case, it's Del Monte.

But no other co-op has achieved what Kaplan calls the "agricultural ideal-where the men who grow the product, process and market it themselves"-by actually buying out the top company in its field (even though it did have to pay a very fancy price). Welch's nine plants have the capacity for handling 110,000 tons of grapes or roughly half of all the Concord grapes grown in this country. And Welch's 1955 sales, \$37.1-million, outclass what the company considers its nearest competitor, the Keystone Cooperative, by some \$33-million.

· Man Behind the Sale-Responsibility

for the unusual sale rests with aggressive Jack Kaplan, who likes to think of himself as "the new kind of American businessman," even though his past operations as a self-made promoter smack little of altruism.

The agreement between Kaplan and the grape growers was signed in 1952, after several futile attempts on the part of the co-op to buy the company. Up to that time, the co-op members simply couldn't come up with enough funds to tempt Kaplan into selling.

• Who Gets What-Briefly, this is how

the present deal works out:

· Kaplan gets at least \$22-million of the \$29-million purchase price. And the \$29-million purchase price is extremely favorable—in view of the company's annual sales of \$37-million.

 The co-op gets possession of Welch's by using funds advanced out of the profits of the company itself to make the purchase.

To accomplish these ends, Kaplan's corporate shell, the Old Welch Co., 90% of whose stock is held by Kaplan, sold its two subsidiaries-the Welch Grape Juice Co. and the Welch Plants Corp.-for \$15-million in cash and a mortgage of about \$14-million.

• The Details--Under the 1952 contract the Welch Grape Juice Co. used its net profits to pick up promissory notes issued on Welch Plants Corp. equipment. The notes, which theoretically belonged to the co-op, were held in trust in the Marine Midland Trust Co. which issued allocation certificates in their stead. For its part, the co-op agreed to sell all its grapes to Welch. In addition to regular cash payments, the co-op's members were given alloca-tion certificates worth \$15-million in proportion to the amount of grapes they sold to Welch.

An additional \$14-million, part of the purchase price, represents the value of net current assets, a value for trademarks, and the costs of capital improvements and additions since the date the contract was signed. The co-op will also issue certificates to its members to cover this sum.

The allocation certificates, worth \$29million in all, will be retired by the coop by applying 10% of the yearly net sales after all expenses have been paid

### Leader

of the new company, which is known as Welch Grape Juice Co. Inc. The certificates will be paid off serially, with the sales fund functioning somewhat as

a revolving fund.

• Gain for Kaplan—The Old Welch Co. will be liquidated by June 1, 1957, and each stockholder will receive a proportionate share of the \$14-million. As principal stockholder, the bulk of this money will go to Kaplan. The money he receives for sale of Welch's will be taxed as a capital gain. He would have received the same tax advantage had he sold out to a private company. But it is questionable if he would have received such a high price.

To Kaplan and the co-op, the sale is "a lesson in enlightened capitalism."

Others aren't quite so sure.

Admirers are enamored with the idea that the co-op had the chance to buy the company. As one agricultural specialist said: "In these days of mergers it would have been no time before Kaplan was bought out." Co-op members feel they've got a consumer franchise in the Welch trademark that will bring them security, even in darker days.

• Skepticism—Detractors aren't convinced everything is so rosy. Some growers in the region are still openly suspicious of Kaplan, who as a friend reports "is a businessman first, and a

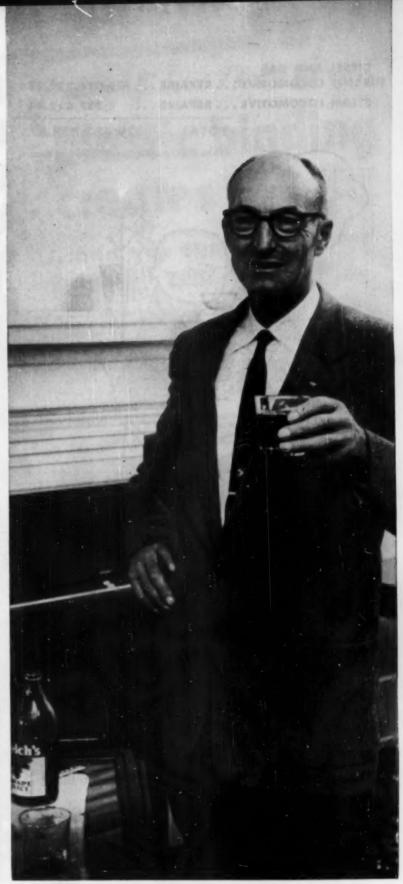
do-gooder second."

Some people close to the situation think the growers are "getting in a little bit over their heads," that the revolving fund to be set up by the company may never fully compensate the farmer. Even now, they claim, some of the farmers are turning in their certificates to local banks, and getting less than full value for them.

Co-op members only chuckle about these claims, and snort "sour grapes."

To them, it is "an agricultural miracle."
The impact of the Welch deal is centered in the Chattauqua-Erie Grape Belt, a thin, 70-mile-long sliver of purple in harvest time that stretches through New York, Pennsylvania, and Ohio. Almost in the geographical heart of the belt is Westfield, N. Y., home of the Welch Co.

 Hard Times—In depression days, the price of grapes fell as low as \$15 per ton. Grapes have always been consid-



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#### UNION PACIFIC RAILROAD

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ered the cash crop in this region. Growers had stunted crops, poor care cut down on the yield even further. Today the scene is brighter. The average vineyard is still small, some 15 to 20 acres. But good growers can get from 4 to 7 tons per acre now, and they get about \$100 per ton for their grapes.

Most of the advance is due to Kaplan, who entered the grape industry in 1933. He had already made a sizeable fortune, adventuring in the Caribbean in the sugar and molasses fields. When he bought his first plant in upstate New York, it was to process grapes for the liquor department of Hearn's Department Store, of which he was president and chairman.

 Welch Competitor—But he soon went into the grape juice industry, forming the National Grape Corp. His top competitor was Welch's, and his biggest problem was to gain the confidence of the grape growers of the region, who had been delivering their grapes to Welch's for decades.

Wooing the Growers'—Kaplan assigned himself and his No. 1 trouble-shooter, Ray Ryan, now executive vice-president of Welch's, to the task. When farmers needed a new piece of equipment or a new tractor, they got it—quietly, but with a suggestion they tell their friends about it.

Then Kaplan pulled his most effective punch. In 1939, he told grape growers he would pay \$50 per ton for grapes, even before the crop was in. For years, Welch's had processed the crop, and then given out their price. Kaplan's blow floored some of the minor processors, and even Welch's felt its sting.

• Kaplan Takes Control—In 1945, Kaplan already had stimulated a band of farmers into thinking about purchasing the National Grape Corp. but in that same year, Lehman Bros., on behalf of the American National Bank of Nashville, Tenn., offered him major control of Welch's. With the backing of a band of growers, who later formed the nucleus of the National Grape Co-op, Kaplan bought the controlling stock interest in the Old Welch Co.

There were two main jobs facing Kaplan when he came to the company. One was to build up grape production and increase sales; the other, to convince the growers, and the strait-laced Welch personnel, that he was personally interested in their plight. To help him, he hand-picked Ray Ryan, Howard F. Nuss, executive vice-president, sales and advertising, and Martin T. Devereaux, vice-president and treasurer. These key management personnel will also remain with Welch's under the new agreement.

 Expansion—The team expanded the number of plants from two to nine. It introduced modern equipment into the plants, and set up, for the first time,



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FOR YOUR FREE BOOK an effective schedule for the growers to deliver their crop to the plants.

Scientific farming was introduced gradually: 5½-ft. trellises replaced the old 3½-ft. ones, cover crops were used to help fertilize the grapes, sprays killed off berry-moth and leaf-hopper, grapes main enemies, and trimming became more precise. By 1952, production had increased by some 5,000 acres.

• Profit Sharing—Kaplan then established a profit-sharing program, unparalled in agriculture, for Welch's growers. The company set aside all profits, except a 10% slice for stockholders of the Old Welch Co. The remaining profits were passed on to the growers. After this move, the National Grape Co-op grew fast. From a little more than 800 members in 1946, the co-op reached its present figure of 4,694.

Management strategy also put a stop to a still frequent custom in the industry. It refused to permit "private branding," letting another company use Welch's grape juice under its own brand label.

New stress was placed on sales and advertising under the direction of Nuss, formerly with Standard Brands. He expanded wholesale outlets, introduced new bottling sizes, and in 1949 brought in concentrate, which now accounts for about 25% of sales.

• Personnel Problem—The personnel problem was a little more touchy. Welch personnel, many of them with the company for more than 20 years, were warv of Kaplan's fast-talking approach. It seemed to mark for them an end of the Welch tradition, started by founder Dr. T. B. Welch in 1869.

Dr. Welch was a practicing dentist and prohibitionist. And the Welch company, under his direction and later his son's, appealed directly to the antiwets. Bryan's "grape juice toast" was only a segment of the campaign "to replace wine with grape juice in every house in the country." (Among the company's ads: "The lips that touch Welch's are all that will touch mine," and "Drink Welch's, the drink that needs no chaperone.")

 Bonuses for Employees—But the team helped placate employees by starting a proceeds sharing program.
 During the past three years, no employee has received less than 12% of his annual salary as a bonus under the program.

Lately, Kaplan's attempts to sell wine under the Welch label, still unsuccessful in terms of sales, has met with little opposition from employees.

Last weekend, the deal culminated, Kaplan was honored by co-op members in Dunkirk, N. Y., near Westfield. Among his parting words: "Don't worry about me, I got my share. But you got yours, too. Hold on to it."



#### This is another example of CREATIVE TUBEMANSHIP in action!

Funny how big a little idea can get. It didn't take long for engineers in refining, chemical and petrochemical plants to get on the bandwagon and to cash juicy savings in materials, retubing time, labor and condenser tube inventory space.

The idea? Prefabricated finned or plain U-bend condenser tubes for shell and tube heat transfer units are prearranged according to the condenser blueprint in a disposable box-type pallet. Tubes are fed from pallet to unit in their exact order of installation. It's quicker, easier—saves plenty of headaches.

This is real creative Tubemanship. It's typical of Wolverine where little ideas have become big ideas (and time and money savers) not only in petroleum processing but in refrigeration and air conditioning, plumbing, heating, ordnance and general metalworking.

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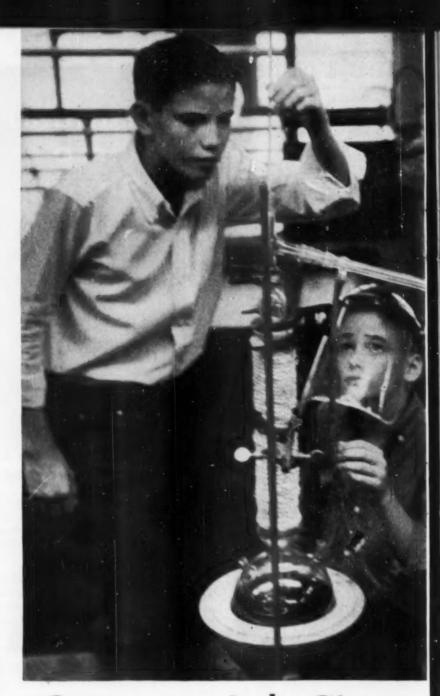
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BOYS Photography group at Sunray Mid-Continent Oil Co. listen to lab instructor W. B. York explain the workings of a spectrometer.



GIRLS High school girls check their findings of bacteria in refinery water. Vail Prather, an executive of the company, gives the scientists a few tips.



## Company Lab Gives

The high school students in the pictures are working on their own projects in the Tulsa laboratories of Sunray Mid-Continent Oil Co.'s D-X subsidiary. Their activities range from manufacturing aspirin to building electric tachometers. In the process, they are participating in a fresh attack by U.S. business on the problem of too few science students.

Long ago, as technology became increasingly important in industry, it became evident that the competition for college science scholarships wasn't what it might be. As a result, places in engineering schools go begging, and com-panies fight tooth and nail for each year's output of technicians.

Management realized that students

- were bypassing science because:

   Many lacked grounding in the basics to tackle stiff college courses.
- · The work seemed routine and humdrum.
- . In many fields, the earning potential is limited.







TUTOR Geologists Watson L. Caldwell inspects fault plane utilizing varicolored strings to show two strata of sand in an oil field.

**TEAM** Three members of Sunray's Science-for-Youth Club pool their knowledge to work out a process for manufacturing copper chloride.

## Teenagers a Taste for Science

As the postwar buildup got under way in 1948, industry went to work on programs designed to perk up secondary school teaching of mathematics and the sciences—using classroom aids and teacher training to give students both a stronger core of essential facts and techniques and an emphasis on the adventure possible in such fields. Now a new facet has been added to the program: reaching the kids directly, outside of school.

Last week, Victor Chemical Works

of Chicago announced a nationwide contest for new ideas on what industry can do to induce high school grads to become scientists and engineers. The company hopes the winning 20 will be worth distributing to interested companies. The top entrants will nominate candidates for Victor's college scholarships.

Some companies, such as American Polymer Corp. in Peabody, Mass., use summer employment as bait to get students into the laboratories. The company gives apprenticeship training and constructive work at the same time and -not incidentally-helps prepare the youngsters for college entrance exams.

• New Attack—D-X Sunray took a different tack last January when it formed a Science-for-Youth Club for its employees' children, and opened its labs to seventh-through-twelfth graders. The students are given a wide range of freedom, and encouraged to develop their own pet projects.

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" . . . 'the oil industry in particular is hard pressed to find all the competent scientists it needs' . . ."

STORY starts on p. 128

tor and a Tulsa math teacher, the program is keyed to give an exciting peek into the world of science. Company technical men are on hand for semimonthly meetings-they don't answer questions, but show the students how to work out their own solutions.

The lab activities include films, talks, even a trip to the National Science Fair in Oklahoma City-but the lab projects are the real meat of the program. One student, 17-year-old Conrad Fitzgerald, built a miniature still, and became so interested in it he decided to become a petroleum engineer.

Forty students received achievement certificates for club activity this year, and D-X people are enthusiastic about the results. They expect to expand the program next year, hope even-tually to open it beyond employees' children. Already, they point to cases of students who are majoring in college science courses because of the new light thrown on the field by Science-for-Youth.

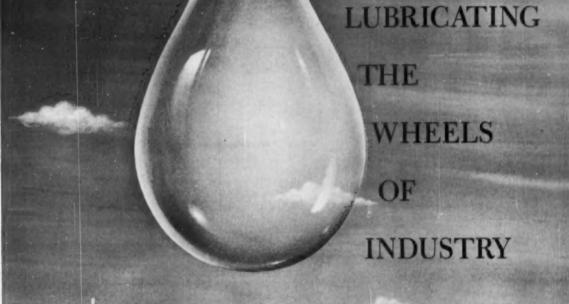
"The oil industry in particular is hard pressed to find all the competent scientists it needs," one official says.
"If this Science-for-Youth program helps direct youth to these professions, it is worth much more than the program has cost to date. We believe it's a step in the right direction."

What did the program cost for its January-May operation? Just \$500. "We spend more than that," a D-X man noted, "for a dinner for people we don't even like."

· Other Tactics-With all this, industry is still active in the classroom, boosting the standards of the science courses. The five-year-old Business Industry Section of the National Science Teachers Assn. provides a clearinghouse for educational relations directors of 150 top companies to thrash out what sort of teaching aids the instructors need. Then the companies turn out pamphlets. books, charts, and films to illustrate or expand on the textbook data. NSTA distributes this output to its members. General Electric alone gives out 15-million copies of its publication every year to high schools.

The Manufacturing Chemists Assn. is launching a five-year, \$1-million program of aids and recognition, and many companies run plant tours, provide guest classroom lecturers, or give science magic shows to school assemblies.

NSTA's Future Scientists of America Foundation conducts the national com-



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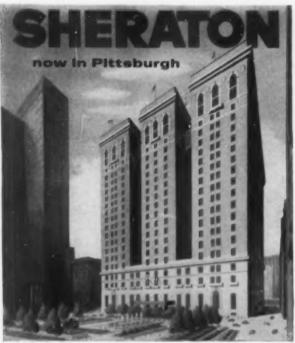


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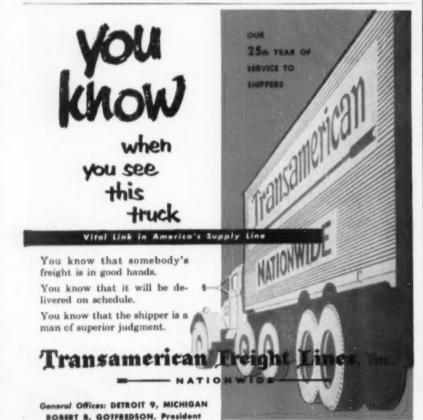
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"... a good teacher has a snowballing effect in producing other scientists . . ."

STORY starts on p. 128

petition for the American Society of Metals' science achievement award, and runs other programs to give extra kudos to the top high school science brains and extra stimulation to the underdeveloped talent. Newspapers, too, work on the prestige angle by sponsoring science fairs with prizes for outstanding junior exhibitors.

• For Teachers, Too—Other companies, seeing that teaching aids and student recognition aren't enough, are working on concrete financial and educational help for the teachers—help that will attract new teachers and keep the present ones up to date. Others, such as General Electric and Shell Oil, send teachers to summer school and pick up the tab (BW—Oct.29'55.pl28).

A large number of companies hire teachers for summer work in labs, introducing them to new developments and boosting their incomes. This summer, New York City Board of Education experimented with a program of placing 33 science teachers in technical jobs in private and government industry so that they would return to their classrooms better teachers. According to Samuel Schenberg, supervisor of science for the Board of Education, the experiment was so successful that it will be extended next year.

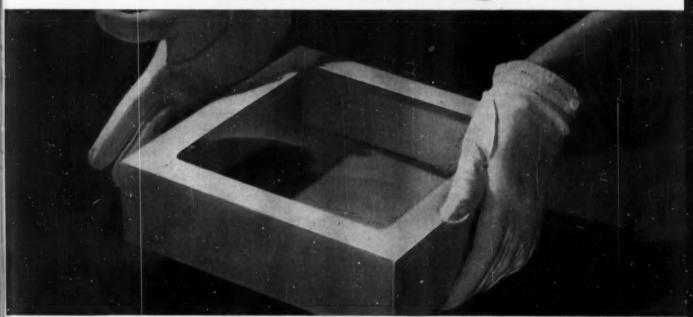
In Cambridge, Mass., Arthur D. Lictle-engineering and industrial research company-hires college grads in pairs. Each teaches in local high schools one semester while the other works in Little's labs. If necessary, they are sent to summer school to pick up credits. After three years, the scientists make their choice: teaching or industry. But if it's the latter, they can't work for Little. As in the other companies, the men who designed the plan there realize that a good teacher has a snowballing effect in producing other scientists; in the long run he is more important than one more man doing research.

 Payoff—Does all this pay off in more students for sciences and engineering?
 The companies think so, and a study made by Cleveland's Case Institute of Technology—one of the five schools giving GE's special summer program seems to back them up.

Case found that 30% of its freshman class had been inspired to take up science and to come to Case by teachers who had attended the summer programs. And 35% of these students ended the year in the top-quarter of their class, less than 5% in the bottom quarter.



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## In Management

#### Farm Machinery Distributors Charge Unreasonable Restraint of Competition

Massey-Harris-Ferguson, Inc., U.S. farm machinery maker and its parent company, Massey-Harris-Ferguson, Ltd., biggest producer of farm machinery in the British Commonwealth, were slapped with a \$16.5-million lawsuit by two Southern farm implement distributors.

The suit, filed in Federal Court in Memphis by Southland Tractors, Inc., and Farm Tractors, Inc., charged the manufacturing concerns with unreasonable restraint of competition in interstate commerce. Consolidated sales of Massey-Harris-Ferguson, Ltd., last year came to

about \$368-million.

M-H-F was formed in 1953 by a merger of Massey-Harris Co., Ltd., and Harry G. Ferguson, Ltd. The marriage took place shortly after inventor Harry Ferguson won a \$94-million settlement from Ford Motor Co. which wound up a four-year court battle (BW-Jan. 17'53,p76). After formation of M-H-F, Ferguson sold out his interest in the company for about \$14-million to devote his time to nonagricultural inventions (BW-Jul. 17'54, p125). Howard Sullins, president of the two suing firms, told the court he organized Southland Tractors in February, 1949, in Memphis, and Farm Tractors in July, 1953, in Oklahoma City, to distribute Ferguson tractors and other farm implements manufactured by the original Ferguson company. The suit alleged that M-H-F refused to furnish distributors of the Ferguson line with enough implements to stay in business, but gave its own branches duplicated Ferguson implements under the Massey-Harris name.

C. P. Milne, vice-president and general manager of M-H-F's U.S. subsidiary, claims the suits were a culmination of "fantastic" and "improper" business demands by Southland Tractors. "In our judgment," says Milne, ". . . their claims were wholly without founda-tion . . ."

#### Thermoid Braces for New Trouble As Another Proxy Fight Shapes Up

More trouble is in the making for troubled Thermoid Co., Trenton (N.J.), maker of brake linings, fan belts, and shoe soles and heels. Graham-Paige Corp., closedend investment company, says it owns or has options on 32.1% of Thermoid's 834,861 outstanding common shares. The stock is selling at about \$121 per share.

In late July, Thermoid management turned down a bid by Graham-Paige for four seats on the eight-man board of directors. A few months earlier, Thermoid won a proxy fight against an insurgent group supported by Frederic E. Schluter, Thermoid ex-chairman (BW-May 12'56,p91). Schluter, three other former Thermoid Officials, and the company itself had been indicted by a federal grand jury on charges of filing false and misleading financial statements with the New York Stock Exchange for 1951, 1952, and 1953. At the time of the attempt to regain control, Schluter owned or controlled 11.7% of Thermoid stock.

In the first six months of 1956, Graham-Paige had a consolidated net income of \$138,153, including a net realized gain of \$444,477 on sale of investments. In the same period a year ago, it lost \$21,700. Thermoid's net income for the six months ended June 30 was \$831,044, compared with \$800,000 for the like 1955 period.

Graham-Paige, one-time auto maker (as Paige-Detroit Motor Car Co., later as Graham-Paige Motors Corp.). turned over its automotive business to Kaiser-Frazer Corp. in 1947. The company, under Adm. John J. Bergen, chairman, has a consolidated wholly owned subsidiary, Whitney Apollo Corp., and three principal nonconsolidated wholly owned subsidiaries: R. Olsen Oil Co., United Supply & Mfg. Co., and M. J. Crosse Mfg.

#### Fiber Board Industry Makes a Play For More College-Trained Help

The Fibre Box Assn. opens an industrywide college recruitment drive this fall. Its member companies produced 80% of the \$1.5-billion worth of corrugated and solid fiber board shipped by the industry's 600 plants

The industry employs some 50,000 workers, but has long been short of college-trained help. The recruitment drive is aimed not only at luring college seniors into a career in the industry, but at generating enthusiasm for the business on the part of present employees. The association says the fiber box industry is not generally considered so "glamorous" as many other industries.

The program will be geared to help individual companies do their own recruiting on a local and regional

#### Forty Plus Clubs Go National To Facilitate Their Job Hunting

Older middle management men in search of jobs are going national. Forty Plus Clubs-groups of men over 40 banded together to help each other find jobs-sprang up in the late 1930s and have been locally active in a number of cities.

Last week, six clubs from New York, Philadelphia, Chicago, Buffalo, Los Angeles, and Washington (D. C.), formed the National Conference of Forty Plus Clubs with headquarters in Washington. As a national group they hope to:

· Improve the exchange of information between clubs -presently they are highly autonomous and often dis-

parate.

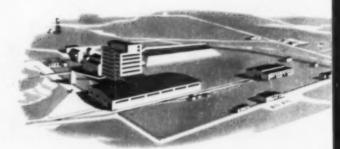
· Get government, corporations, and research foundations to do some serious studies of the problems faced by men over 40 in search of a job.

· Educate the public and business generally to the value both in maturity and experience that these men can contribute to a company.

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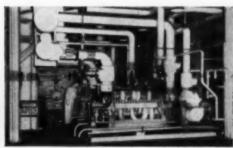


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High moisture-resistance

Product of Carey research, this pipe and block insulation is super-efficient up to









Long life . . . indoors or out

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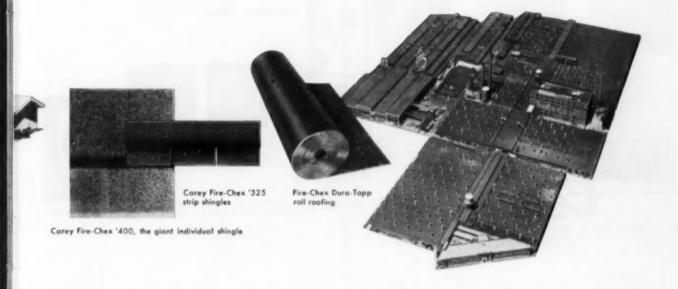
 $1600^{\circ}$  F.... with great strength, high moisture-resistance and cost saving to industry.

# fire-chex

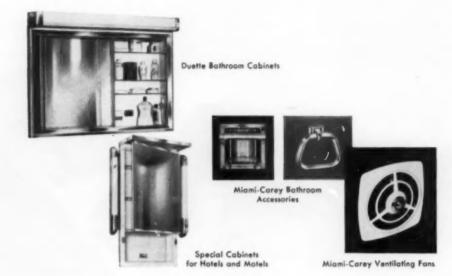


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## World Markets Look Good to

How Westinghouse's Overseas Sales\* Have Soared

(Millions of Dollars)



\* Does not include income from licensees

\*\* Sales forecast DECEMBER WEEK Some sales executives treat foreign customers with a diplomat's restraint. William E. Knox (cover and right), president of Westinghouse Electric International Co., is the other kind. Bill Knox believes that, after the formalities, old-style hard selling gets

The chart (at left) makes his point. WEICO-Westinghouse Electric Corp.'s selling arm overseas—expects record orders of \$109-million this year. And it's looking to a 10% yearly growth over the next decade.

WEICO's total business, even including sizable income from licensees worldwide, lags far behind International General Electric's volume of more than \$250-million.

But it's stepping up, despite stiffening competition not only from IGE, Allis-Chalmers, and others, but also from big-name foreign companies who have recently moved into the appliance

In foreign markets WEICO, a somewhat ignored stepchild in the past, is keeping pace with the parent company's domestic growth.

· Growing Share-One measure of WEICO's importance to Westinghouse is the way it bolstered Pittsburgh's income during last winter's 156-day strike. Its \$100-million sales income accounted for only about 7% of Westinghouse's gross, but its net income reportedly amounted to more than 25% of Westinghouse's total net.

Before the war, the foreign market for appliances wasn't much. Since the war-as consumer markets overseas have developed rapidly-WEICO's sales of refrigerators, laundromats, and other consumer goods have built up fast.

But heavy apparatus such as transformers and switchgear-big moneymakers before the war-still is the mainstay of foreign sales. WEICO's chief pride is its 15-year-old program for selling power plants and specialized equipment in a "package.

· Package Deals-Here are some recent package-type orders:

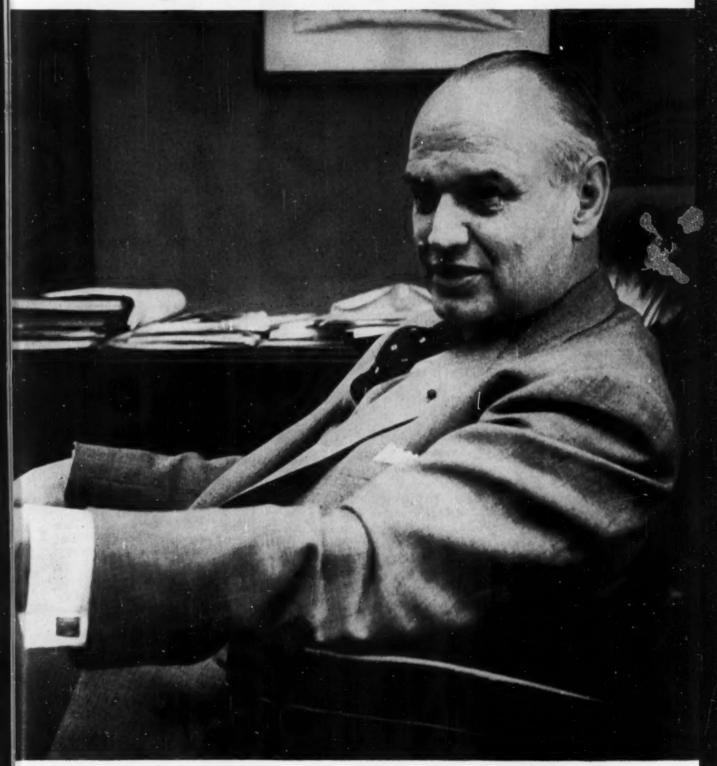
· An 11,500-kw. atomic reactor for Syndicat d'Etude de l'Energie Nucleaire in Belgium. Its installation awaits selection of a "safe" site. Negotiations for more reactor sales are under way with companies in six countries.

· Two power plants-each rated at 156,250 kw.-for Kansai Electric Power

WILLIAM E. KNOX, president of Westinghouse International Electric Co.



# Westinghouse Sales Chief





...FREE!"An antiquated electrical distribution system was costing a midwest refractory plant a lot of money. Power losses were alarmingly heavy. The problem was aggravated by the immediate need for increased plant output. Three shifts were needed instead of two.

A Square D Field Engineer was called in. He reviewed the setup with the Chief Engineer and made a specific proposal involving switchboards, panelboards and power duct. Most of the equipment was "standard"—quickly available from local distributor stock. Other items were expedited through one of Square D's strategically located assembly and warehouse plants.

Due to the vastly increased efficiency of this new distribution system, the power cost for three-shift operation was no greater than for two under the old regime!

At your service—in 3 important ways

Field Engineering Counsel is available through Square D branch offices in all principal United States cities—and in Canada, Mexico and England. Backing up this counsel are the design and manufacturing facilities of 13 strategically located Square D factories and the localized services of a nation-wide network of authorized electrical distributors.



NOW ... EGAM PRODUCTS ARE A PART OF THE SQUARE D LINE!

SOURRE D COMPRNY

Co., Inc., and Kyushu Electric Power Co., in Japan.

 Steel-mill electric drives for India's Tata Iron & Steel Works, Argentina's SOMISA mill, and Mexico's Hoialata y Lamina mill.

 Two seawater evaporator units each handling 1.3-million gal. a day for Kuwait in the Middle East.

• Breaking the Ice—WEICO'S projects division, which negotiates and supervises these sales, is Knox's brainchild. Organized in 1941, the division takes on all sorts of major projects. It acts as prime contractor, supervises work and deliveries from beginning to end. By wrapping up all phases of a project in one package, it makes purchases of Westinghouse equipment more attractive to foreign customers. On a steam plant, for example, about 45% of the price goes to WEICO; the rest, to maybe 90 or 100 other companies subcontracted by WEICO.

Knox uses this package technique in the atomic field—for instance, in handling the Belgian reactor order. In this newest area, WEICO—like other reactor manufacturers—has only a vague idea of costs. "We're beating a path through the jungle," Knox says. "We don't know how much the Belgian job will cost. But our second reactor order will pay off—for sure."

• Fast-Moving-Knox has salesmen and engineers all over. Take one recent day:

 John Nance, a service engineer, had finished work on a hydro project in India, was headed for Brazil to supervise installation of two 50,000-kw. generators.

 Two top salesmen—W. S. Stevenson and F. D. Kelly—were in Athens talking with the Public Power Corp. of Greece about a new steam plant.

 Nels A. Anderson, director of Far East sales, was in Washington to discuss financing of a steam power plant for Taiwan Power Co. on Formosa.

#### I. Sales Power

It's obvious that WEICO's key asset is manpower. Bill Knox himself says: "All we are is a selling outfit—we make nothing." Of 809 employees of the company, 650 are in sales—91 of them in the field. Travel is a big expense—and time consumer. For instance, WEICO personnel traveled 870,500 miles during the first half of this year.

The sales organization—to some extent—parallels the parent company. There's an apparatus division, a consumer products division (set up several years ago to push growing appliance sales), and an area sales division. The apparatus and consumer divisions work closely with Westinghouse's factories. The area division—split into the Americas, Europe & Africa, Far & Middle East, and U.S. (for selling components

**Monsanto Chemistry in Action** 



# Can a plastic material bring your product idea to life?

Many a product idea was once stymied on the drawing board—a victim of cost figures, production bottle-necks, or performance shortcomings. Today, more and more frequently, it's a plastic material that fulfills the design requirements and brings the product idea to life.

For example, the material for the handle of the new Sunbeam Frypan which houses the automatic controls, had to meet critical heat requirements. In addition, the handle had to have unusual surface hardness, resistance to detergents and boiling water, and of course keep its beautiful appearance under constant use.

Over thirty exhaustive tests were made to screen dif-

ferent materials. Molded of lustrous jet-black Monsanto Resinox phenolic, the handle meets every specification set up by the designers.

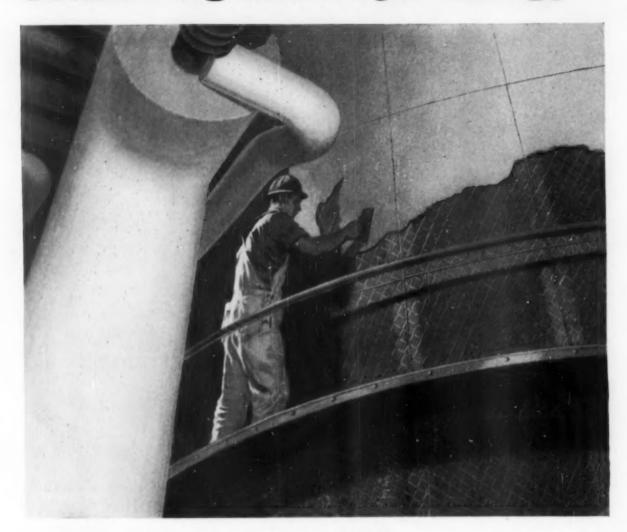
Plastics have been called the raw materials of progress. Perhaps one of the big family of Monsanto plastics can give you the lead you've been looking for. We'll be glad to direct you to qualified custom molders who will work with your designers on the application of Resinox or whatever plastic material is best suited to your requirements. Write to Monsanto Chemical Company, Plastics Division, Room 269,

Springfield 2, Mass.

Where creative chemistry works wonders for you



### **Conserving Industry's Energy**



■ Industry knows that the one best way to conserve its flow of vital energy is to keep heat and cold where they belong. And that's just what Eagle-Picher's insulations are doing: increasing thermal efficiency by controlling heat and cold to exacting specifications, in factories and marine installations, in power plants and refineries. They slash fuel costs and curb costly corrosion of equipments.

There's another deciding factor in industry's reliance on Eagle-Picher insulations. This extensive line of insulations ranges in scope from molded pipe coverings to factory-fabricated blankets, from felts to precisionfinished blocks, from cements to protective coatings.

Yes, wherever insulation is needed—on pipe lines and ovens, tanks and boilers, coolers and cookers, turbines and pumps, valves and fittings—you can be sure that Eagle-Picher's insulation products are superior—whether they are mineral wool or other high temperature molded insulations. There is one of these efficient insulating products to meet your every need. We welcome opportunities to share our diversified experience. Just drop us a line.

Divisions and principal products... CHEMICAL DIVISION—lead and zinc pigments and oxides, sulphuric acid • FABRICON PRODUCTS DIVISION—automotive products, plastics, waxed paper and cellophane food wrappers • INSULATION DIVISION—aluminum combination storm enclosures, mineral wool insulations, diatomaceous earth products • MINING & SMELTING DIVISION—zinc, lead, germanium, cadmium • ONIO RUBBER COMPANY DIVISION—molded and extruded rubber products.



to U.S. manufacturers who assemble and export the final product)—deals directly with foreign markets.

• Head Man-Kingpin of this far-flung operation is 55-year-old Knox, who a few weeks ago completed 35 years with WEICO. Though he was an engineer by training, he soon found his natural bent in high-powered selling. He throws luncheons for visiting foreign executives and dignitaries, travels like a trouper-with a 24,000-mile swing through the Far East scheduled for next month. He takes personal pride in the gallery of bigwigs-from U.S. and Latin American presidents on down-whose autographed pictures hang on the walls of his 40 Wall Street office.

He doesn't care much for details. His subordinates privately admit he's weak on administration. "I'm interested in the right man," Knox himself says, "and not in organizational charts." But with Jose de Cubas, his executive vice-president, and old-timers like Robert D. McManigal, sales vice-president, smoothing out the details, there seem to be

few administrative snarls.

• Lieutenant-Knox's righthand man is Arthur Partridge, vice-president and assistant to the president. Unlike International General Electric but like Westinghouse itself, WEICO doesn't have much capital to play with—to finance overseas projects, for example. So Partridge stays strategically in Washington to (1) keep in touch with government agencies, (2) locate business leads from embassies, and (3) get financing for overseas projects.

One measure of Partridge's success is the fact that an Export-Import Bank official regards WEICO as "one of the sharpest companies in the foreign field." Just this year, WEICO has negotiated \$19.2-million worth of Ex-Im loans for projects in Japan, Greece, Brazil.

#### II. New Respect

This kind of financial footwork is helping to brighten Westinghouse's attitude toward WEICO. For years, WEICO felt as if it were off in a corner-just one of Westinghouse's eight subsidiaries. Pittsburgh looked on WEICO as a good thing to have around-but mostly when bad times hit the home market. Now, partly because of its help during the strike, WEICO has more or less "sold" Pittsburgh on its real worth.

 Semi-Autonomous—Five members of the company's 11-man board are from Westinghouse (including Gwilym A. Price, chairman and president). E. V. Huggins, Westinghouse's vice-president for corporate affairs, chaperons WEICO from his office at 40 Wall Street. Except on basic policy and financing, though, WEICO is pretty

much its own boss.

There's enough independence so that sharp differences of opinion between parent and offshoot have cropped up. When Westinghouse got out of the electric and diesel-electric locomotive business, WEICO heartily disagreed with the decision. Westinghouse reasoned that with strong GM and GE competition, there wasn't much future in the locomotive engines. But WEICO felt its parent had handed a rich overseas market to IGE and others. Then, too, Westinghouse has taken a protectionist stand on trade matters; WEICO, a more liberal view.

But at the working level, the two get along fine. For example, WEICO's customers have different requirements from Westinghouse's. Laundromats shipped abroad, for one thing, need attachments to heat water. Similarly, voltages and cycles are not the same abroad as here. So WEICO has been in huddles with Pittsburgh engineers to design as much flexibility into appliances as possible.

#### III. Ways of Working

In its younger days, WEICO was directly under Westinghouse's wing. That was also the case with IGE,

which grew out of GE.

Both WEICO and IGE started as export departments. In 1919, each got corporate status. WEICO took over sales offices and subsidiaries—in England, France, Italy, Norway, and Russia—set up originally by George Westinghouse. Likewise, IGE inherited overseas holdings from the two companies—Edison and Thomson-Houston International—that had joined to form GE.

Since then, each company has licensed products and processes around the world. Licensing helped each company exploit commercially the technological advances of its parent and get inside protectionist countries.

Here's WEICO's growth in licensing: 1925—four licensees in four countries; 1935—29 licensees in nine countries; 1946—35 in 18 countries. Today WEICO has 83 licensees in 23 countries—and IGE about the same number. For selling, WEICO has 341 distributors in 133 countries and territories; IGE, a comparable force.

 The Differences—But similarities end here. During the late 1920s and the 1930s, WEICO sloughed off subsidiaries, converted several to a licensing basis. At the same time, and since, IGE did the opposite—setting up plants.

Today WEICO has a minority interest in Industria Electrica de Mexico, S. A., a leading electrical producer in Mexico, and token investments in a few licensees. IGE, by contrast, has a majority interest in eight manufacturing plants—and puts money into forcign companies outside the IGE fold.

WEICO isn't clear on why it unloaded its subsidiaries, but there are lots of factors that add up to an answer. For one thing, IGE got a head start in several rich overseas markets—particularly in Latin America. Then, there's the suggestion that George Westinghouse was a great engineer but a sloppy administrator especially of foreign holdings. Another factor is that Westinghouse lacked the capital either to maintain or to expand subsidiary operations.

WEICO puts up good arguments for sticking to licensing. Licensing, it says, causes less resentment in nationalistic-minded countries than U. S.-controlled subsidiaries. The licensee is a locally owned company but gets the benefits of Westinghouse's technical and product research. For this reason, too, WEICO says a foreign country is more likely to allow royalties from a licensee to be remitted to the home office than profits from a U. S.-dominated subsidiary.

• Profitable, Too—Sales of Westinghouse's 8,000 basic products, of course, are WEICO's bread-and-butter business. But licensing is turning a handsome profit, too. The company won't give out dollar figures, but between 1926 and World War II, WEICO's licensing income tripled. Today it's well over 10 times the 1926 figure.

Altogether, the 83 licensees employ some 200,000 workers. Last year WEICO licensees produced around 300,000 Westinghouse refrigerators. The foreign companies range in size from a tiny fluorescent-bulb plant in Spain to Argentina's Siam di Tella, LTDA.

Licensing arrangements are flexible. For example, take Brazil's Luis Villares Elevador Atlas Co. A WEICO licensee, it's now reportedly the third largest elevator manufacturer in the world. So successful is it that Westinghouse is borrowing some Elevador Atlas patents. In addition, WEICO often finds its own salesmen competing directly with a licensee—and considers this a real stimulus to hard selling rather than a conflict of reasons.

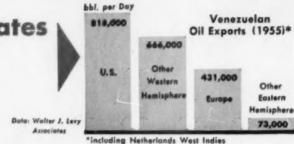
 Still Growing—It's harder to find new, high-quality licensees these days than it was a decade ago. But WEICO continues to push this end. For example, Siam di Tella and one of WEICO's Brazilian licensees are teaming up to build a \$10-million laundro-

mat plant in Brazil.

WEICO also has its eye on increasing direct investment abroad. Last year it upped its holdings of Industria Electrica from 9½% to 26%. (Canadian Westinghouse Co., Ltd.—76% owned by Westinghouse—comes under Pittsburgh's direction.) If 10-year-old Industria, a fiasco until recently, proves profitable, it may set the pattern for more WEICO investments abroad. END

## Today, Venezuela's Biggest Oil Consumer





However, comparatively few American oil firms are operating in Venezuelan oil fields, like—

# Lake Maracaibo

NOW, Venezuela hopes to increase its oil sales to this country by opening the door for these additional U.S. companies.

- American Oil Producers Association
- Hancock Oil Co.
- Pure Oil Co.
- Signal Gil & Gas Co.

- Standard Oil of Ohio
- Star Oil Co.
- Superior Oil Co.
- Venezuelan Leaseholds\*\*

\*\*Bahamas company backed by U.S. interests

Cousiness week

## And U.S. Oilmen Flock In

There will soon be even more derricks on Venezuela's fabulously oil-rich Lake Maracaibo (picture above). The official word isn't out yet, but 13 companies—all but two of them U. S. out-fits—have gambled \$400-million on leases to look for oil on 350,000 acres in the lake. As part of the bargain, they had to take about the same acreage along the wild, jungled Colombian border. In a few days, it's expected Caracas will throw another area in the southwest of the country open to bids.

If the companies strike it luckyand most observers believe the leaseholds look very promising-Venezuela's production will zoom upward.

The country is already the world's No. 2 producer after the U.S. In 1955, the U.S. produced 7-million bbl. a day, Venezuela 2.5-million bbl. a day, and the combined Middle East production was 3.2-million bbl. a day.

With the new leases, Venezuela hopes to accomplish these three things:

 Boost its revenue. Last year Caracas earned more than \$500-million on its deal to split crude oil profits with the oil companies. But that's not enough to finance its grandiose development plans.

Boost the country's known reserves. They are proved to only 12-billion bbl. now—compared with the U.S.' 30-billion and the Middle East's 230-billion. At the current rate of production that's only a 15-year supply.

 Help cancel out moves in the U.S. for import restrictions on oil. Until now Venezuelan oil has been dominated by the Big Three-Jersey Standard's Creole Petroleum Corp.; Shell; and Gulf's Mene Grande Oil Co. More U.S. companies operating in



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Quickly, visually, effectively the Yellow Pages emblem directs readers to your dealers...when you use Trade Mark Service in telephone directories.

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Identify your outlets in the Yellow Pages with Trade Mark Service and display this emblem in your magazine, TV and billboard advertising.

If you are not now a Trade Mark Service user, contact your local telephone business office today for full information.

## Look what paper is doing now:

Blemishes in X-ray film might cause an error in diagnosis, so nearly every film manufacturer folds a special Riegel protective paper around each film. No less than eleven technical properties are combined in this paper to guard against scratching, static electricity, chemical or photographic reaction, etc.

Betty Crocker's new Junior Baking Kit assures success for playtime bakers by sealing the flavor and



quality of 12 cake mixes and frostings in pouches of Riegel's laminated, poly-coated glassine. Pouches are slipped into junior-sized boxes just like mommy's.

Glassine is made transparent by squeezing with tremendous pressure between rolls of a giant super-calendar. Amazingly, the giant rolls are themselves made of paper. Disks of a soft, all-cotton Riegel paper are compressed on a shaft, machined and polished into steel-hard rolls.

When you need something new in paper, ask about Riegel's "pilot-plant" paper machine. It will make an experimental run of just a few hundred pounds for you. All you pay is \$25 per hour plus cost of materials. Riegel contributes research, engineering and labor to help you develop new ways to use paper. Write to Riegel Paper Corporation, P. O. Box 250, New York 16.

Now...what can Riegel do for

TECHNICAL PAPERS FOR INDUSTRY

Venezuela will mean more voices taking up the cudgels before Congress

and with the Interior Dept. for unre-stricted imports from Venezuela.

• Suez Windfall—The Venezuelans got a windfall for their whole program with the Suez crisis. The argument that Western Hemisphere oil in the hand is worth more than cheap Middle East oil in the bush of Arab nationalism is stronger today than ever be-

It explains why Gulf's Mene Grande has been one of the heaviest bidders in the Venezuelan picture, why Gulf laid down \$140-million for 127,000 acres of the Lake. Until now Gulf has been heavily dependent on its onehalf interest in the Kuwait Oil Co. for both crude and profits (BW-Aug. 18'56,p171).

• Lifeblood-You can get an idea of what oil means to Venezuela from just a few statistics: Last year petroleum made up nearly 95% of the country's \$1.9-billion in exports. It largely financed the country's \$788-million in imports. It accounts for two-fifths of the Venezuelan gross national product, 90% of the net foreign investment of \$2-billion, one-sixth of all wages and salaries.

Oil has been steadily mounting in importance to the country since Royal Dutch Shell first blew out a well near Lake Maracaibo in the 1870s. Output rose steadily through the 1930s, then dropped off during a decade of political violence after the death of the dictator-president, Juan Vicente Gomez, in

· Split-Production started climbing steeply again from 1943. That's when the new law was adopted splitting profits of the oil companies' operations between company and government on a 50-50 basis. The law survived a threeyear tenure of the left-wing Accion Democratic government, became the model for government-company oil deals around the world.

While in actual operation the government nets about 53% of the profit, it has turned out to be a mutually profitable operation all around. Creole Petroleum Corp., the giant Venezuelan subsidiary of Standard Oil of New Jersey and one of the world's top three producers, rolled up profits of \$293-million last year-a 29% return on the gross investment. Shell's Venezuelan operation showed a profit of \$122-million. Earnings of the other operators were equally high.

· Winners and Losers-It's such profit margins that the Venezuelans are using to attract U.S. independent producers -long the bulwark against greater imports from Venezuela for the U.S. market. Official announcement of awards of new leases is being held up. But the unofficial reports in Caracas and Mara-



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#### BUSINESS WEEK

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caibo list among the 13 winners in the bidding only four companies currently operating in Venezuela: Mene Grande, Creole, Shell, and Atlantic Refining Co. (in combination with Sun Oil Co.).

The rest are all newcomers, and all but one is a U.S. firm: Superior Oil Co., an independent, paid the top price—a whopping \$2,626 an acre. Newly formed Star Oil Co. laid out a reported \$50-million for two leases, including the only dry-land concessions granted thus far except for the isolated border areas which the government tied to the lake leaseholds.

Other successful bidders are: Venezuelan American Independent Oil Producers Association (headed by millionaire William Saxe of New York); Venezuelan Leaseholds, set up this year in Nassau in the Bahamas by U.S. interests; and a combination of Standard Oil of Ohio, Pure Oil Co., Signal Oil & Gas Co., and Hancock Oil Co.

In the first round of bidding, the disappointed reportedly included Texas oilman Clint Murchison, and a group of six U.S. independents headed by Denver Oil & Gas Co.

• More to Come—At least another 30 companies will be in the scramble for future bidding—including Spanish, French, and German groups. Standard Oil of Indiana, which sold its old lease holds 25 years ago to Jersey Standard, is back looking for Venezuelan holdings.

back looking for Venezuelan holdings. In all, Venezuela plans to add another 5-million to 7-million acres of concessions to the 15-million acres now held in leaseholds. That still takes in only about a quarter of the country that geologists classify as possible oil-bearing territory.

• Jumping—Forecasts earlier this year set 1-million bbl. a day as the increase in Venezuelan production over the next decade. But already it has jumped 200,000 bbl. a day in the first eight months of this year.

That kind of oil in Venezuela's future will boost its current \$800-million national income, and permit the country to use its oil revenues for development in other industries. The new concessions, government planners hope, will bring in additional \$500-million a year.

It will take that kind of money to carry out the government's program.

Caracas already needs the payments on the current concession bids to get out of a tight position the government treasury found itself in this summer. Payments to contractors on government projects have been slow. And already a \$200-million state-owned steel industry, a \$150-million state-owned petrochemical complex, port projects, shipyards, and dams are on the drawing boards. In the talking stage is a \$44-million to \$99-million bridge over the Maracaibo Strait and a second lavish superhighway from Caracas to the sea. END



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## In Business Abroad



# American-Style Merchandising Pays Off for Swiss Store Chain

Globus Dept. stores in Switzerland easily doubled sales during month-long "American Fairs" held this summer (BW-Dec.24'55,p50). Inside, the stores in Zurich, Basle, and St. Gall were turned into the nearest thing the Swiss could get to a U.S. store. Outside, they used huge outdoor advertising signs to add to the U.S. atmosphere (picture).

Globus says most of the U.S. merchandise introduced at the fairs will continue to be carried year-round.

#### Where Credit Is Easing— It's Japan, Not the U.S.

U.S. businessmen, sweating under the Federal Reserve's credit squeeze, might be envious of Japanese businessmen at first glance. In the last year, interest rates in Japan have turned down to a postwar low. But it's a low by Japanese standards only. Borrowing by debentures cost 8.4%; by call loans, 6.12%.

Nor do these rates help the smallest Japanese businessman. Because of local banking practices, borrowers must maintain minimum bank balances, frequently as much as 30% of the sum borrowed. That means the Japanese businessman often is forced to turn to private money lenders.

Still, loans have been easier during the past few months. Pressure is coming on the money market due to heavy borrowing for industrial modernization. But the government's policy is to try to keep rates low. Last August the Bank of Japan, the central bank, did hike the discount rate on commercial bills from 5.84% to 7.3%. But in reality the effective discount rate has been going down. That's because commercial banks have had to pay a penalty rate for leaning too heavily and too frequently on the central bank. Recently—

largely because of an excellent rice crop and expanding exports, which have put more money into circulation—they haven't had to go to the central bank so often.

#### Cotton-for-Autos Barter Regulation Reaches End of Road in Mexico

Mexico's cotton-for-autos barter ruling isn't likely to last long (BW-Aug.18'56,p175). By this week, the four U. S. auto parts importers—GM, Ford, Chrysler, and International Harvester—had sold \$32-million of the \$50-million worth of cotton they had to get rid of. In exchange, they get permits to import automotive parts.

Mexican government officials who thought up the plan apparently overestimated the Mexican crop and the effect that the U.S. surplus disposal program would have on world markets (BW-Mar.30'56,p30). Virtually all of last season's crop has been sold—about two million bales. This year's crop is likely to be smaller.

There are indications the whole plan was adopted prematurely as a result of Mexican agitation over what they thought was a U.S. cotton dumping program.

#### Mexican City Looks to U.S. To Cure Its Power Shortage

Monterrey, Mexico's booming northern industrial center, is power-hungry. The city is seeking an Export-Import Bank loan to help finance a new 60,000-kw. electric plant.

Meanwhile, representatives of Mexico's CFE (Federal Electricity Commission) have been negotiating with Central Power & Light Co. of Corpus Christi, Tex. CFE would like Central Power to deliver power to Monterrey on a three-year contract.

No firm agreement has been signed but CFE representatives are reported to be talking with TVA officials about buying used transformer equipment to modify the voltage for Mexican use. Central Power already supplies some Mexican towns across the border.

#### Amazon Timber May Be Tapped To Get Into Newsprint Market

An Anglo-American pulp and paper mill machinery company claims to have a key to the use of vast tracts of tropical timber in Brazil's Amazonia. The company, Parsons & Whittemore, has been working with the U.S. company, Black-Clawson, to perfect machinery that can turn the wood into newsprint.

The company plans to build a \$6-million mill in the Amazon valley as a joint venture with SPVEA-a Brizilian government development company in Amazonia—and Tsian, a Chinese Nationalist investment outfit. A similar project by a French firm failed last year.

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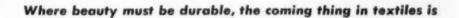
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## INTERNATIONAL OUTLOOK

BUSINESS WEEK SEPT. 8, 1956



There's far more to the Suez conflict than free navigation of the strategic waterway—more even than Western access to Middle Eastern oil.

What's at stake is the West's freedom in the years ahead to do business in the whole area from Cairo to Singapore.

Russia's Nikita Khrushchev, just as much as Egyptian Pres. Nasser, has his heart set on removing this whole area from the Western orbit. A Nasser victory at Suez is meant merely to start the ball rolling, with oil nationalization next on the list.

In short, the Suez crisis is the first big test of strength in Moscow's economic war against the West.

That, at least, is the way London and Paris size up the whole Suez situation. Behind the scenes in Washington there is strong support for the same view—despite the calm tone the Administration is taking.

This explains why London is preparing to use force, if necessary, to bring Nasser to terms. The British military buildup in the Eastern Mediterranean is no bluff. It's costing Britain too much economically to be that—in terms of jeopardizing the government's anti-inflation program and the strength of sterling (page 28).

What's more, Prime Minister Sir Anthony Eden has staked his own political future and the life of the Conservative government on getting a Suez settlement that will assure respect for other British economic interests.

As things are working out, there may be an interesting comparison between the Suez crisis and the Indo-China crisis of mid-1954—with Britain and the U.S. in reverse roles.

In the case of Indo-China, the U.S. provided the thunder and Eden, then British Foreign Minister, played the role of conciliator.

This time, the British, with an assist from the French, are providing the thunder and State Secy. John Foster Dulles is taking a conciliatory line.

There are some signs that Nasser may soon be ready to talk turkey over Suez. So far, he hasn't dared to brush off the five-nation committee that is discussing the London Conference proposals with him in Cairo.

Nasser is feeling more than military pressure these days. The British economic squeeze is beginning to hurt—to the point where the government has to beg the Egyptian public not to hoard food and pharmaceuticals.

On top of that, some of the other Arab countries seem to be getting nervous about Nasser's ambitions. Jordan's King Hussein moved this week to discuss the problem with Syria and Lebanon. To mean much, though, Jordan will need Saudi-Arabia's backing. And there's no evidence yet that King Ibn Saud is likely to cut his ties with Nasser.

Meanwhile, Nasser is still opposing an international control body at Suez—and the West still refuses to settle for a mere watchdog agency.

As the negotiators hassle over the problem, the whole issue may look like a battle over semantics. But watch for two things:

- · Whether Nasser starts conceding real protection to the waterway users.
- Whether Moscow eases up on its pro-Nasser propaganda and shows signs of pressing Nasser to compromise.

## INTERNATIONAL OUTLOOK (Continued)

SEPT. 8, 1956

That old Brazilian combination—nationalism and corruption—is giving the Communists another dividend. This week Pres. Kubitschek hastily signed an 18-point statement of atomic policy, setting up a Brazilian AEC. It was an effort by the Kubitschek administration to get out from under charges of shady deals with atomic prospecting companies.

But the new statement contains anti-American clauses. It would end arrangements for U. S. technical assistance in atomic matters. It would also void an arrangement to swap Brazilian thorium for U. S. wheat.

The biggest jokers of all are these: (1) a requirement that all future international atomic deals be approved by the Brazilian Congress, where nationalism often runs amuck; and (2) the fact that three Communist-liners—including one former Communist deputy—have been appointed members of the new agency's board.

The Aramburu government in Argentina is headed for another show-down with organized labor—still heavily under Peronista influence. One fourth of the country's three-million workers are either on strike or have voted a stoppage at their leaders' discretion Now 25,000 light and power workers have given the government a week to meet their demands or face an electrical shutdown.

Aramburu cracked one general strike last November and smashed a transport strike in April. But he hasn't been able to reach any long-term understanding with the unions because of their excessive wage demands.

LACSA, the Costa Rican Caribbean regional airline in which Pan American owns a minority interest, has been offered a long-term French credit to meet the cost of buying jets. The offer—made through the French embassy in San Jose by "French interests"—is for a loan of up to \$10-million to buy French Caravelle transports. LACSA has been thinking about buying Convairs with British turbo-prop engines.

The World Bank has told New Delhi that it is ready to contribute heavily to India's ambitious second five-year plan (BW—Apr. 7'56, p119).

Over-all dollar figures and specific projects to be financed haven't been discussed yet. But loans over the period of the plan almost certainly will top the \$200-million the World Bank has loaned India since 1948. They may well approach the half-billion mark. Rail transportation probably will get first priority.

Meanwhile, private Western firms and Communist-bloc governments are competing in Indian industrialization.

- This week it looks as if two U. S. drug-makers—Pfizer and Merck—have lost out in their bid to build a pharmaceutical and chemical intermediates industry in India. The Indians say they can get a better deal from Moscow.
- The East Germans have offered to help the Indians build their own film manufacturing industry. Last year New Delhi bought \$63-million worth of raw film—most of it from the West.

Indian National Carbon Co., a subsidiary of Union Carbide & Carbon, Corp., has decided on a big expansion program.

It will build a zinc rolling mill to produce zinc alloy strips for its flashlight batteries. It also plans a new flashlight case plant and a chemicals plant.

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# In Washington

#### Military and Civil Air Pilots Will Follow the Same Beam

The long squabble over rival military and civil air navigation systems has been settled. Within the next four years a combined system, known as VORTAC, will start operating as a common system, beaming distant and directional information to pilots of both military and

civil aircraft from integrated equipment.

The new airway control system incorporates features of the military's tactical air navigation system (TACAN), civil aviation's network of omnidirectional radio range stations (VOR), and distance measuring equipment (DME). It has been set up by the President's Air Coordinating Committee, the government's top inter-

agency aviation policy group.

Congress, which has long objected to the installation of dual military and civil air control systems, has demanded the adoption of a common plan to make flying safer in the jet age. Under the new compromise plan, military planes will continue to take distance and directional instructions from their own TACAN stations. Civil aircraft will continue to receive directional information from comparable civil stations, but will get their distance information from the military installations.

The new plan means eventual scrapping of 450 civilian

DME stations.

## The School Bell Tolls For a Record Number of Students

One out of four Americans—41,553,000—are now in school. This is the fourth consecutive year that U.S. school enrollment has hit a record high. The latest figures from the U.S. Office of Education show that 1,754,300 more students will be enrolled during the 1956-57 school year than last year.

The biggest increase—1.1-million—shows up in the lowest grades, kindergarten through the eighth grade. College enrollment is up by nearly a quarter-million.

#### Navy Reveals New Developments In Its Ballistic Missiles Program

U.S. development of a 1,500-mile or intermediaterange ballistic missile (IRBM) may be a lot further along than Washington has revealed. The latest clue: The Navy is converting two Mariner-class merchant ships into naval "launching platforms" for the Jupiter IRBM.

Jupiter is being developed as a joint Army-Navy project at the Army's Redstone ordnance arsenal at Huntsville, Ala. The Army will use Jupiter as a land-launched missile; the Navy as a strategic naval weapon. It will be manufactured by Chrysler Corp.

Jupiter is one of four top-priority military ballistic missile projects. The others are the Air Force's (1) Thor, also a 1,500-mile missile, under development by Douglas Aircraft Co.; (2) Atlas, a 5,000-mile intercontinental ballistic missile (ICBM), under development at General Dynamics Corp.'s Convair Div.; and (3) Titan, under

development by Glenn L. Martin Co.

Up to now, Navy planners have talked about converting battleships into IRBM launching platforms. The reason for turning to high-speed cargo ships hasn't been made public. The former SS Garden Mariner is being converted at the New York Naval Shipyard, and the former SS Empire State Mariner at the Norfolk Naval

The Mariner-class is the biggest (13,000 tons) and fastest (20 knots) U. S. merchant ship. The government built 35 or these vessels four years ago—partly to take up the slack in civilian shipyards—at a cost of \$8.5-million each. Five were assigned to the Navy; most of the remainder were sold to private shipping companies for \$4.5-million each.

### Gilt-Edge Loan Insurance

#### Spurs Private Shipbuilding

The Maritime Administration has given its first 100% mortgage insurance guarantee for merchant shipbuilding under a law passed this year. Previously, the government could guarantee 90% of 87½% of money borrowed for private shipbuilding—with some exceptions for special purpose ships when it would guarantee 100% of a loan. Shipping companies always have had to put up 12½% of the building costs.

With the government now standing 100% behind loans, the move is geared to spur shipbuilding by making loan money easier to come by. On an \$8-million ship, for example, the government will guarantee an additional \$700,000 that previously was unsecured, or that shipping companies had to dig up themselves.

## Steel Files More Applications For Fast Tax Write-Off Aid

Add list of steel companies applying for new fast tax write-off aid on production expansion from the Office of Defense Mobilization in anticipation of new goals (BW-Aug.18'56,p27):

U.S. Steel Corp.—\$94.4-million for expansion of its Fairless Works, to include a \$48.9-million open-hearth furnace, \$13-million blast furnace, \$8.5-million ore sintering facilities, \$19-million for coke ovens, and a steel mill addition at \$5-million. This \$94.4-million is in addition to the \$208.6-million expansion on which the company asked help last week.

Alan Wood Steel Co.-\$7-million for pig iron and

steel ingots and powdered iron capacity.

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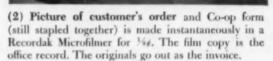


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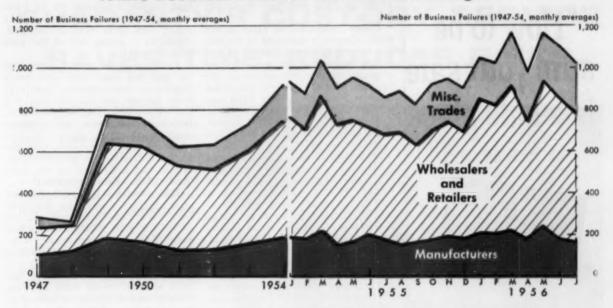
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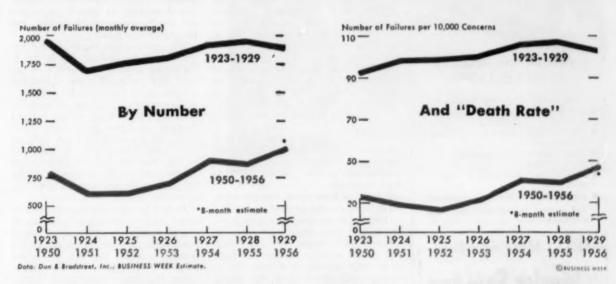
#### FINANCE

## THE POSTWAR BANKRUPTCY PICTURE:

While Business Failures Have Been Rising ...



#### ... They're Still Much Less Than in the "Roaring '20s"



# ... It's The Tyros Who Go Broke.

More and more people are coming to worry over the swelling volume of business failures in a time of fat prosperity (charts). Dun & Bradstreet, Inc., whose national figures on such failures have the weight of Holy Writ, reports a growing stream of inquiries on why failures are so numerous "at a time

when gross national output of goods and services is at an unpredecented annual rate of \$408-billion and incomes are moving almost uninterruptedly from peak to new peak."

The question got extra publicity at last month's Democratic Convention, when Tennessee's Gov. Frank G. Clement, the keynoter, wailed high and loud about the flood of failures. Citing the "Statistical Abstract of the United States" as authority, Clement claimed that failures had climbed from 40,087 in 1953 to 53,136 in 1954, and to 59,404 last year.

Actually, Clement's figures run about

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five times higher than the definitive statistics compiled by Dun & Bradscreet, the only business-failure figures contained in the 1955 edition of the Statistical Abstract. D&B sets the business fatalities as 8,862 in 1953, 11,086 in 1954, and down to 10,696

· Earlier Troubles-The D&B figures belied Clement's statement in another direction. D&B found that the rate of increase in failures, both in number and in percentage, was even steeper in the Fair Deal years of 1948-1950 than it has been more recently. Thus, D&B says that the number of failures increased by 5,686 (or 164%) in 1948-1950, as compared with a more modest 3,085 (or

41%) in 1953-1955.

Indeed, for all their admitted recent increase, business failures of late have cut a meager figure compared with the roaring 1920s, the latest period that is roughly comparable to the post-World War II boom. As the two lower charts show, there were more actual failures in the 1920s, and the corporate death rate-the number of failures for each 10,000 businesses-was solidly higher in the earlier period.

· The Rosier View-Even lumped together, these "favorable" considerations cannot obscure the fact that the current rate of failures is too important a business indicator not to merit the worried attention it is getting from the public at large. Economists, too, have a weather eve cocked, though their professional view is generally that the rising trend is normal enough. Here is how they reason:

In the first place, the ever-present human urge to "go into business for yourself" always beats its strongest in boom times. And it's equally a matter of record that failures always increase steeply when times are good.

The zooming production and avid consumer buying that characterize boom times are always a magnet for inexperienced people who set up their own businesses, as D&B puts it, "in the hope of learning as they go, while capitalizing on the general prosperity."

Some of these neophytes make good, but a great many more fail to stay the course. D&B figures that more than half of all reported failures are businesses that are only five years old or vounger, and that 90% of the failures can definitely be traced to "inexperience."

· Greater Stress-This problem of inexperience has been accentuated of late. D&B explains it this way: "Today's . . . businessman probably operates under a much greater strain than his counterpart did 20 or 30 years ago. Advances in communications and technology in factory, store, and office have speeded up the business pace, requiring fif he is to prove successful] considerably more factual knowledge and knowhow on the part of the entrepreneur, as well as a larger initial capital investment."

Considering this especial stress, it's understandable why the economists feel that the rising rate of failures doesn't have too dire a meaning for the economy as a whole. The high mortality today, even more than in the past, represents a sorting out of the men from the boys.

The economists are well aware that the past few years have been much tougher on new businesses than were those halcvon months just after V-J Day when corporations and public were both starved for goods. They have been much tougher, too, than 1950-1953 when the conditions arising from the Korean War brought an artificial shower of sales and profits alike on the inefficient and the efficient operators.

These latest days have produced some of the toughest competition that many trades have experienced since the late 1930s, and it is natural enough that many of the huge postwar crop of inexperienced entrepreneurs have gone to

the wall.

• The Breakdown-D&B figures that small operators in the retail field continue to account for about half of all business failures. For the first half of 1956, more than half of the retail failures were clear down in the \$5,000-\$25,000 category; there was a marked rise of mortality in apparel stores, general merchandising establishments, and the automotive group.

The construction business set a record for failures, probably due in part to the return of really hard selling in this field. But construction has always had a higher death rate than other fields.

· Geography-All regions of the country except New England had a rising business mortality in first-half 1956. Texas was especially hard hit, suffering 73% more failures than in the 1955 period. But the Middle Atlantic and Pacific states continued to rack up the largest number of business flops, according to D&B.

Dollarwise, the agency adds, the average amount of failure liabilities in the first half of 1956 proved about three times the size of prewar 1939's monthly average. But this rise is not so great as it appears on first glance. Allow for today's considerably higher price levels and you find that the rise in question actually figures out to only some 36%.

Moreover, when you also allow for the vast expansion in business volume since then, recent failure liabilities actually look less alarning than in 1939. In 1939, for example, they added up to around \$2,000 for each million of gross national product, in the 1956 first half, however, losses totaled only some \$1,-300 per each million of GNP. END

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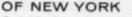
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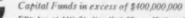
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## In Finance

#### Interest Rise Comes Back Home— Big Banks Want to Pay Out More

A few weeks ago, New York's commercial banks were busy upping the rates they charge their borrowing customers, boosting the prime rate to 4%. Now, they want to pay out more interest themselves—to the customers

who have time deposits with the banks.

New York's two biggest banks, the Chase Manhattan Bank (nation's second largest), and the First National City Bank (third in the country), have petitioned the Federal Reserve Board for permission to increase the rate they can pay on time deposits. The current maximum rate is 2½%. The bankers want to go to 3% in order to keep time deposits from being withdrawn to seek more profitable rates elsewhere. For instance, a customer with time deposits in a bank at 2½% might be expected to prefer to buy bankers acceptances at 3¼% to 3½%, or even Treasury bills, which last week were yielding 2.83%.

Both petitioning banks hold hefty time deposits for foreign correspondent banks and other foreign accounts. The main aim of the move for higher rates is to keep those

depositors happy.

Besides the problem of retaining foreign accounts on deposit, commercial bankers need some bait to attract domestic savings. In this field they are in competition, among others, with mutual savings banks, where rates have risen fast and are slated to go even higher (BW—Sep.1'56,p82). Last week, commercial bankers in St. Louis raised rates on savings to 2% from 1½%; but other cities have already scraped the maximum 2½% interest rate mark, as has New York.

#### Money Pinch Hits Finance Company; Southern Bell Will Try Its Luck

Tight money continues to overpower the corporate bond market. Last week General Acceptance Corp., after holding up its issue for nearly 10 days, bowed to the stiffest market conditions in 25 years. The sales finance company will pay 4.80% to maturity on a \$10-million debenture issue it is sending to market in place of the \$20-million offering originally planned. Recently, other big finance companies have either chopped back the size of their issues or withheld them altogether.

Joining General Acceptance and the hard-bitten few who have gone ahead with offerings despite market conditions, will be a big American Telephone & Telegraph Co. subsidiary, Southern Bell T&T. Southern Bell has asked

for bids on a \$60-million issue by Oct. 2,

In 1953, when money was nearly as tight as it is today, Southern Bell pulled a \$30-million issue out of the market rather than put a 3% coupon on it. A year and a half later, it sold a \$55-million issue at 3%.

Wall Streeters recall that Southern Bell was right when it pulled out of the tight market of '53, wonder if it might do an encore should underwriters' bids set too high a coupon now. Pacific T&T's \$78-million issue of a few weeks ago was priced to yield 4.23% to maturity, well above the yield on the 1953 Southern Bell offering. But in 1953, Southern Bell was better able to defer its borrowing than most corporations: It went to its rich parent, Mother Bell, for a \$52-million advance, paid it back out of the low-coupon 1954 issue.

## Two Rail Lines Seek Joint Control In Plan For Florida East Coast Ry.

Southern Ry. Co. and Seaboard Air Line RR Co. last week joined forces in advancing a new plan for acquiring control of the soon-to-be-reorganized Florida East Coast Ry. Co. The two roads presented their plan to the Interstate Commerce Commission, which already has under consideration two other proposals involving the fate of the Florida road.

One of these other plans is put forward by the largest holder of the Florida East Coast's 5% first and refunding bonds, the St. Joe Paper Co. of Jacksonville. That plan would establish the Florida East Coast as an independently operated carrier following reorganization. A rival plan, put forward by the Atlantic Coast Line RR Co., would absorb the Florida East Coast into Atlantic Coast Line through an exchange of Florida bonds for Coast Line bonds and common stock.

Prior to submitting their own plan, Seaboard and Southern had both backed the St. Joe plan, which would give Florida East Coast bondholders an exchange of a new 5% income bond as well as 40 shares of common stock in the reorganized road, for each bond now held.

Seaboard and Southern now have offered to buy from the bondholders a majority of stock in the reorganized road, and also guarantee the new bonds received by bondholders accepting their offer. The two roads say this would mean that for each bond owned in Florida East Coast, bondholders would get a new \$1,000 income bond guaranteed by the two roads, as well as at least \$555 in cash for stock.

#### Finance Briefs

August corporate bond flotations totaled only \$949million—lowest since last April, when money was not nearly so tight as it was last month.

Food Machinery & Chemical Corp. has offered to swap 1.2797 shares of its \$10 par common stock for each share of Hudson-Sharp Machine Co., Green Bay (Wis.) paper machinery maker.

Taxes are popular only with tax collectors, and Commerce Clearing House has listed the taxes most popular with state revenours: All 48 states have some sort of taxes on property, licenses, gasoline, motor vehicles, liquor, public utilities, and insurance companies. Cigarette taxes prevail in 42 states, sales taxes in 35, corporate income taxes in 32.

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#### THE MARKETS

## Wall St. Talks ...

. . . about viewpoints on bond market . . . motor earnings . . . Alcoa secondary . . . watching expansion.

Over \$20-million of new Virginia municipal bond issues are held up by current tight money conditions, says state auditor J. Gordon Bennett.

The other side of the coin: Finally, says W. Linton Nelson, president of Delaware Fund, an investment trust, "the really forgotten man of our times—the one who prefers, or is required, to invest in fixed income securities—is in for a break."

Latest 1956 motor earnings estimates: Some smart Streeters now figure Ford Motor's net won't top \$4.50 a share, against 1955's \$8.17. They look for Chrysler to net \$3.50 to \$3.75, against \$11.49 a share in 1955.

Another huge secondary offering of Aluminum Co. common (150,000 shares, now worth \$17.7-million) will soon show up. Again the seller: Alcoa's chairman, Arthur V. Davis. After the sale, he'll still own 1,186,824 shares, some 6% of Alcoa's outstanding common.

Keep an eye on current expansion programs, a canny Streeter warns. In many lines, he claims, it soon may well take above-average "hard selling" to keep active all facilities now being built. An example: He understands that gypsum's productive capacity by yearend will be 30% greater than it was only two years earlier.

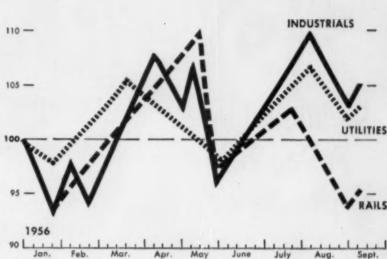
Many bond dealers badly overestimated their selling capacity last week. The Federal Land Bank's \$245-million offering fell far short of being a marketing success, 'despite its much-publicized oversubscription by dealers.

Wall Street studies indicate first-half 1956 underwriting results of the fire and casualty insurance group to be the worst in years. Culprits: Severe fire losses and a further rise in automobile accidents.

Money market advice from Moody's Investors Service: "We recommend selective purchases for long-term investors having an inflow of new money." Others "may well await indications of a basic turn in interest rates . . . not foreshadowed for the foreseeable future."

# THE 1956 STOCK MARKET: As Summer Ends





Data Standard & Poor's Corp. Daily Stock Price Averages.

Change were were

## Can Fall Stage a Rally?

To paraphrase the song, it's a long, long while from May to September. August's stock market was painfully reminiscent of May's, and it made the while seem that much longer. During last month, stock prices, measured by Standard & Poor's index of 50 industrials, dropped from their all-time high of 530.8 to a mark of 500.5—a dip of 5.7%—on the next-to-last day of the month.

This performance wasn't so dreadful as May's, when prices dipped 10.3% from the then all-time high, but it served notice that summer, and the traditional summer rally, was ended.

• Brisk Rally—This year's summer rally was a good one. From the depths of late May, prices pushed up 4.3% in June, another 6.1% in July, and eventually edged to their early August peak. But the dog days of August sapped the market's strength to such a degree—average daily trading volume on the New York Stock Exchange was the lowest since August, 1955—that today many Wall Streeters are wondering if there will be enough vitality for a fall rebound.

Labor Day has often marked a turning point for the stock market, and this year the annual question of which way September prices will turn is hotter than ever. In 1946, the September stock market became a debacle that sent prices into a three-year decline. But in 1953, September was the take-off point for a three-year advance that so far has fallen just an eyelash short of the percentage gains for the booming 1926-1929 period.

• Slowdown—There's no longer any question that the bull market has slowed to a walk so far this year. The year has been more reminiscent of 1952 than any other recent year. Indeed, a growing number of Wall Street's market analysts are prophesying a market of the 1951-1953 type for the next year or so. That would mean a prolonged period of generally sidewise movement, with any major moves downward.

The seesawing slowdown of this year's market is apparent from other indicators besides prices. Trading volume so far this year is running 14% behind last year, and the lack of strength in volume is all on the buying side. Volume on the downside—when prices have been declining—has generally been slightly higher during the first eight months of this year.

You can see the slowdown, too, in

You can see the slowdown, too, in the pinpoint selectivity in individual issues for the first eight months. Harold Clayton, of Wall Street's Hemphill,



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Noyes & Co., points out that within stock groups, individual performances have been widely divergent.

• Group Patterns—Take the aircrafts, for instance, which as a group have been bull market leaders this year. Boeing, United, and Curtiss-Wright show gains of \$11.63 to \$16.37 a share during the first eight months. But Glenn Martin common hasn't moved at all, and Douglas, Lockheed, and Republic have all racked up price losses.

The same pattern shows up in other groups. Dow Chemical has gained more than \$16 a share this year, du Pont has lost \$26 a share. American Can is off nearly \$4 from yearend prices, Continental Can up nearly \$7. U.S. Steel has gained almost \$7 a share, Bethlehem has dropped nearly \$4.

 Steel & Autos—The selective performance of individual stock issues reflects the diverse nature of the investment milieu as the third quarter draws to a close.

Right now, steel is the heartbeat of the economy, as production picks up to levels very near those just before the July shutdown. Industry observers look for near-capacity production through the rest of this year, but the first quarter of 1957 will provide the answer to how strong the "normal" demand is for steel. Many mills already have enough orders to close out this year, and the auto model changeover with attendant hefty production should keep the mills humming.

The role of autos is perhaps the most pivotal of all (page 19). Consumers have the income to buy the new models, but the question is: Will they spend it? If past experience is any indicator, the fourth quarter for autos should be every bit as good as Detroit hopes. If sales should fall short of expectations, it could be a most depressing influence for market and economy alike.

 Other Factors—As steel production picks up, and auto sales rooms are shined up for the '57s, two other factors are throwing a bearish chill on the stock market.

One is the muddled Suez Canal situation (page 28). As the Cairo hearings wear on, and new detachments of French and British troops unload in the Suez area, the uncertainty of a settlement favorable for the international oils hangs heavy on that group. Worse yet, these are the very shares that long provided the leadership for bull market advances.

The other monkey-wrench is tight money. Not only are investors looking for high yields being attracted away from equities by juicy returns on bonds and preferreds (BW–Sep.1'56,p79), but some companies are already holding up on expansion projects because of what they feel are prohibitive money rates (BW–Sep.1'56,p69).

There is another factor that the market will have to weigh before the outcome of the November election is known and digested. That is third-quarter earnings. By today's estimates, Wall Street expects they will not be particularly good. Coupled with many disappointing second-quarter figures, that could put the damper on stock prices.

#### Falling Stock Prices Hit Convertible Bonds

	1955	1056	Runge	Recent	1956	Gains
	Close	High	Low	Level	Maximum	Recently
Aldins, Inc. 414s, 1970	103.50	105.50	92.00	92.50	+ 1.9%	-10.6%
American Tel. & Tel. 336s, 1967	132.12	1.38 . 2.5	129.50	133.00	+ 4.6	+ 0.6
Bethlehem Steel 314s, 1980	127.87	129.25	115.12	121.87	+ 1.1	- 4.7
City Investing 4s, 1961	168.68	120.00	100.00	100.25	+20.0	+ 0.3
Columbia Gas 252s, 1964	120.00	128.25	115.00	126.25	+ 6.9	+ 5.2
Combustion Engineering 3%'s, 1981	*100.00	108.50	103.62	104.00	+ 8.5	+ 4.0
Continental Baking 35%s, 1980	113.75	113.50	100.62	100.62	- 0.2	- 6.3
Detroit Edison 314s, 1969	142.00	142.00	135.00	140 .12		- 1.3
Dow Chemical 3s, 1982	130.50	177.50	123,25	166.12	+36.0	+27.3
Eastern Stainless Steel 41/2s, 1971	*100.00	126.25	104.25	121.00	+26.3	+21.0
Plying Tiger Line 51/2s, 1967	116.00	151.00	109.00	116.00	+30.2	*****
General Dynamics 31/2s, 1975	107.75	111.75	101.75	108.00	+ 3.7	+ 0.2
General American Trans. 4s, 1981	*100.00	115.75	107.50	109.00	+15.7	+ 9.0
General Telephone 4s, 1971	*100.00	114.75	106.25	108.87	+14.7	+ 7.9
W. R. Grace Co. 31/38, 1975	107.87	116.00	105.25	110.50	+ 7.5	+ 2.4
Grand Union 314s, 1969	151.00	159.00	139.50	159.00	+ 5.3	+ 5.3
Herts Corp. 4s, 1970	117.37	149.00	113.50	137.12	+26.9	+16.8
Lockheed Aircraft 3%s, 1980	111.75	112.00	102.50	104.00	+ 0.2	- 6.9
National Tea 31/2s, 1980	109.50	110.75	99.62	100.00	+ 1.1	- 8.7
Northrup Aircraft 4s, 1975	106.50	107.00	89.50	91.00	+ 0.5	-14.6
Radio Corp. 31/2s, 1980	112.00	117.12	106.50	106.50	+ 4.6	- 4.9
Scott Paper 3s, 1971	*100.00	113.00	105.50	106.00	+13.0	+ 6.0
Sinclair Oil 314s, 1983	131.00	163.00	127.00	144.00	+24.4	+ 9.9
Southern Cal. Edison 314s, 1970	115.87	119.87	112.50	113.00	+ 3.5	- 2.5
Southern Natural Gas 41/3s, 1973	123.50	135.75	122,25	128.75	+ 9.9	+ 4.3
Standard Oil (Ind.) 356s, 1982	116.00	148.62	114.50	138.00	+29.0	+18.9
Vanadium Corp. 31/18, 1969	134.00	166.25	119.00	148.62	+24.1	+10.9
Wheeling Steel 3%s, 1975	107.25	116.50	105.37	110.75	+ 8.6	+ 3.3
All prices are in per cent of pur.						

## World Tin Pact Is Set for a Trial

- Pool will try to set top and bottom prices on sales of the world's tin, starting next month.
- But constant worry ahead for members of tin agreement is: Will the pact keep working?
- Experience with other commodity pools, past and present, has charted some of the shoals.

Next month, the London offices of W. K. Davey, former head of the London Metal Exchange, will have an expectant air. Six checks from points around the globe are due to arrive in Mr. Davey's offices in October, checks from the six major tin producers in the world. Their deposits with Mr. Davey will signal the start of the International Tin Agreement's operations.

Varied hopes hang on the deposit of these checks: those of the governments of many underdeveloped countries who want a steady income of foreign funds, of tin miners in the jungles of Malaya and the bare hillsides of Bolivia who want to keep their mines going; of State Dept. policymakers in Washington who would like to see steady prosperity in the underdeveloped countries.

When the checks arrive in London, the International Tin Agreement, signed two years ago, will finally gain some substance. Its 19-member Tin Council-made up of six producing nations (who market 90% of the world's tin) and 13 consuming nations (the U.S. is not a member)-will have some real assets for the first time. It will collect between \$5-million and \$10-million from the six producing nations by the end of October; by mid-March they'll have put a further \$14-million to \$19-million into the council's treasury

· How It Works-With this money, the council aims to keep tin prices, traditionally subject to wild variations, from falling near 80¢ a lb. The man whe'll manage this buffer money is buffer stock manager W. K. Davey. He'll use the \$25-million to buy tin when prices sag-thus forcing them up again. And when tin climbs near \$1.10 a lb., Davey will sell from his hoard of metal to push prices down again. That, anyway, is what the charter of the Tin Council says he'll do. It also says that the council may, any time its stock of surplus tin reaches 10,000 tons, impose export restrictions on producing nations to help maintain prices.

· Quick Test-This new agreement, and the Tin Council's plans for stopping gyrations in the price of tin, are set for a quick test.

One of the biggest single buyers of. tin-the U.S. stockpile-has withdrawn. almost completely from the market. It took almost 20,000 tons during 1955. almost 12% of the 170,000 tons of tin marketed throughout the world that year. Now surplus tin is beginning to pile up. Estimates are that there'll be a 12,000-ton surplus on the world market by the end of this year: that the surplus may be a little more than 20,-000 tons by mid-1957, largely because of the cessation of U. S. stockpiling.
With their \$24-million fund, the

Tin Council's 19 members believe they can buy and hoard the greater part of this surplus and keep tin prices from

falling sharply.

· Watchers-Commodity traders in the U.S. will be keeping a sharp eye on the deals the Tin Council may make. And so will the foreign trade policy experts in the State Dept. For the success or failure of the international tin pact will bear heavily on:

· The U.S. government's trade

· Operations of U.S. traders in commodity markets.

· Friendship for the U.S. among underdeveloped countries, whose internal economic stability is often dependent on exports of only one commodity.

#### I. One Aim-Stability

From the underdeveloped countries has come much of the postwar pressure for stabilization schemes to cut out excessive ups and downs in commodity prices. International commodity pacts did operate between the wars -but with mixed success. One of these was a forerunner of the present tin pact, a producers' buffer pool arrangement that was fairly successful. Postwar, underdeveloped countries, many of them just stepping out of colonial status and beginning to build their own industries, wanted stable earnings of foreign funds to stay solvent. And in the West, rapid expansion of industry prompted demands for a sure and growing supply of primary products.

With these two forces pushing them, some 50 nations have since the war joined in two new commodity agreements, covering wheat and sugar. And after the tin agreement begins functioning, more commodity pacts may be organized to cover world marketing of olive oil, jute, and rubber.

About the only thing that pacts such as these have in common is that each participating country agrees to buy or sell its wheat or its sugar within a fixed price range. But each agreement uses different methods to keep commodity prices within its range.

• Wheat—The International Wheat Agreement's 40 members (six exporters, 34 importers) do this through "multilateral contracts"-agreements between producers and consumers to buy and sell fixed quantities of wheat among themselves at from \$1.50 a bu. to \$2

Since the six exporters who are members of the pact produce only 32% of the world's wheat, the agreement isn't completely effective: When prices go low enough, importers sometimes turn to exporters who aren't members of the pact and buy wheat from them at less than \$1.50 a bu. In most countries that are members of the pact, the exporters or importers can make no wheat deals without their government's consent. In a few nations, the government itself is the selling agent or the buying agent for wheat.

One stiff blow hit the wheat pact just as it was about to go into operation in 1953. Britain, the world's largest wheat importer, joined the pact when it was signed in 1949, but quit before the agreement had any effect. It decided it could frequently bank on buying wheat at less than the pact's

minimum price.

International Sugar · Sugar-The Agreement's 23 members (15 exporters, 8 importers) try to keep sugar prices at between 3.25¢ a lb. and 4.35¢ a lb. by a system of export quotas imposed on the producers. Each of the exporting countries agrees to hold back 10% of the sugar it would otherwise try to sell overseas. If prices move close to the pact's maximum, they can sell sugar from these held-back stocks to ease prices down again. And, if prices dip near the minimum while those stocks are still unsold, the Sugar Council can cut all the producers' export quotas by as much as 20%.

This pact covers 81% of the world's sugar exports; consequently, it's more



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Allen B. Du Mont Laboratories, Inc., Executive Offices, 750 Bloomfield Avenue, Clifton, N. J.
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effective than the wheat agreement. But now some exporting members are getting restive about the quotas allotted to them, and some non-member producers are threatening the future of the pact by rapidly raising their production and tempting consumer nations with lower prices.

#### II. Place for the U.S.?

To many U.S. businessmen, all this interference with the free flow of world trade is highly distasteful; it seems to smack of cartels, of protection for inefficient producers, of governmental intervention.

The State Dept.'s foreign economic policymakers generally go along with this. On their advice, the U.S. has refused to join a coffee pact, has resisted attempts at being dragged into a rubber treaty, and has given only tacit support to the tin agreement. (In each pact, the U.S. would have been among the consumer nations. It is an exporting member in wheat, both producer and importer in sugar.)

It's generally to a producer's advantage to be a member of these commodity treaties: He has greatest say in setting the rock-bottom price.

Now some groups in the U.S. are urging that the State Dept. change its policy on commodity agreements, that the U.S. promote and join more of them. Most in these groups are economists, some of them working for farm agencies in Washington, others teaching at colleges. Large-scale wheat, cotton, and rice producers are adding weight to the pressure for U.S. membership in commodity pacts.

They're backed by economists who make policy for some of the specialized agencies of the United Nations—the Food & Agriculture Organization and the Economic & Social Council, for example. One U. N. study shows that most underdeveloped nations would get no benefit from the economic aid fed to them each year if the prices they got for raw materials were to dip 5% in that same year.

These figures, they say, prove their point that in the long run it would be cheaper—and more effective—for the U.S. to promote international commodity agreements than to keep pouring economic aid to the underdeveloped lands.

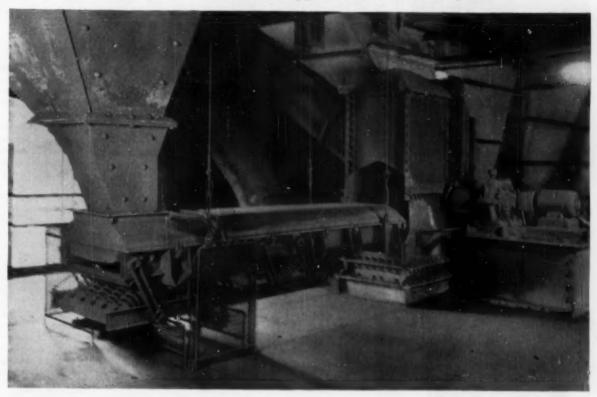
#### III. A Spotty Record

But there's a catch in any argument for or against international commodity pacts—and that is that neither of the two formed since World War II has had a fair trial.

Ever since the wheat agreement was signed in 1949 and began operating in 1953, its main support has been the

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combination of U.S. foreign policy and domestic agricultural policy. In 1948, the year preliminary arrangements were being made for the wheat pact, the U.S. government possessed practically no surplus stock of wheat. Today, the farm price support program has piled up around a billion bu. stock of surplus wheat. In a time of no world tension, the U.S. probably would have tried to sell much of this surplus wheat abroad. But through the Cold War and the new economic competition between East and West, U.S. foreign policy has dictated that everything possible be done to avoid antagonizing smaller nations whose prosperity depends on wheat exports.

The International Sugar Agreement, which was signed in October, 1953, and began operating three months later, seems on the surface to have been successful so far. Prices have held fairly

· Trouble Ahead-But there's a fastgrowing threat to its future. Brazil dropped out of the pact just after it began operating. It didn't want to be bound by the export restrictions which, for Brazil, inevitably meant cutting production and increasing unemployment. Asian countries like the Philippines and Formosa, which did join, are now pressing the Sugar Council to let them step up production and take the risk of lower prices, rather than face the prospect of spreading unemployment. · Strikes Against Tin-The Interna-

tional Tin Agreement hasn't even had a chance to be tested yet. But already there are doubts among U.S. commodity traders of whether the agreement's dual method-using a fund of cash as well as a stock of metal-of holding tin prices steady will actually work

The Tin Council's operations haven't got off to an altogether rosy start. Here's what happened: To get together a treasury of money and metal, the council gave each of its producing members-Malaya, Indonesia, Bolivia, Nigeria, Thailand, and the Belgian Congo-the alternative of chipping in about 15,000 tons of tin or the equivalent in cash, based on the floor price-80¢ a lb.-of the agreement. The council hoped it would get metal as well as money to start its operations. That would have been more to the tin consumers' interests, for strikes in Malava and tension over the Suez crisis may cause spot shortages of tin. But, because tin prices have been high lately, all the producers have decided to send in checks instead of metal. It cost them less that way.

If tin prices drop by about the middle of next year, as they're expected to, the council will start buying tin to take some of the surplus out of the market.

Pressure-Eventually, for though, when prices rise again and tin

approaches \$1.10 a lb.-the upper price limit of the agreement-the council is supposed to sell its tin hoard. And here, say U.S. commodity traders, lies the biggest catch of all. The producers will put extreme pressure on the Tin Council to stop it selling from its stock when prices are high.

#### IV. Pacts & Diplomacy

The pressures of foreign policy could still force the U.S. into an international coffee pact, even though it rejected a bid to help form such an agreement last year.

As the world's No. 1 coffee consumer, the U.S. is interested in keeping coffee prices down. But as the No. 1 nation of the Americas, it's also interested in keeping the Western Hemisphere pros-

perous.

When Latin American countries wanting to form a coffee pact asked the U.S. to join in last year, the State Dept.'s South American experts were just reading a report from coffee traders that said coffee might be so much in surplus by 1958 or 1959 that green coffee prices might break more than 50%.

· Alternatives-So the State Dept, had to decide: What's better for the U.S .to have lower coffee prices, or to risk the economic upset and political unrest that would come in Latin America if coffee prices fell 50%?

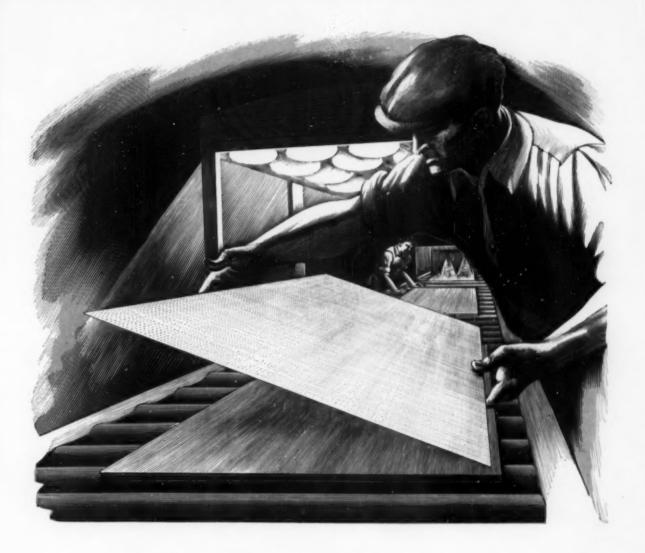
They rejected the bid, but the political concomitant of a sharp coffee price fall remains. And among some of the State Dept.'s South American experts the betting is strong that if coffee prices do break, the U.S. may help set up a world coffee pact. Much of the same diplomacy-trade dilemma has kept the State Dept. policymakers wondering whether it should advise that the U.S. promote and join pacts covering rice and cotton.

· Focus on Asia-Some U.S. agricultural experts back the idea of a rice pact. It would be to the advantage of U.S. rice growers if the U.S. were a member of such a pact. The rice growers have the highest production costs of any in the world: a high minimum price for rice would help them compete more favorably with low-cost producers like those in Thailand and Burma, who are the world's largest rice exporters.

But the State Dept. sees trouble ahead if U.S. rice farmers start competing with those in non-Communist

Asian countries.

The same trap keeps the State Dept. from approving the idea of an international cotton pact. Again, U.S. membership in such a pact would be to the advantage of U.S. cotton growers-and for the same reasons. But relations are already delicate between the U.S. and two of the world's major cotton producing nations-India and Egypt. END



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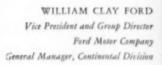
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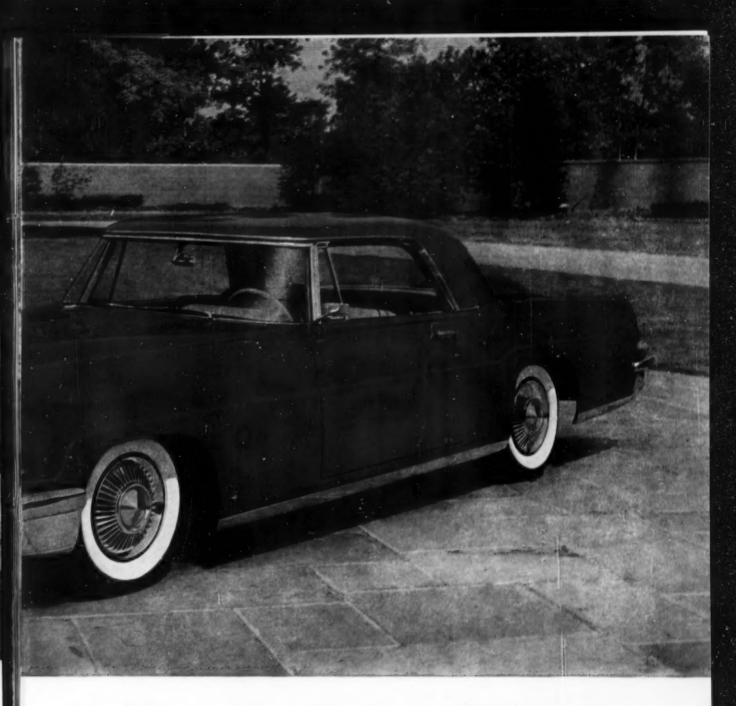


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#### PERSONAL BUSINESS

BUSINESS WEEK SEPT. 8, 1956



If you're planning to make repairs or improvements on your home this fall, it might pay you to look into an FHA-insured loan. The law has been amended to make this type of borrowing more attractive to homeowners.

You can now borrow a maximum of \$3,500. For any loan exceeding \$600, the repayment period can be as long as five years and 32 days; loans of less than \$600 must be paid off in three years and 32 days. But the old ceilings were more cramping: You could borrow no more than \$2,500 for no longer than three years.

If you're eligible—and you probably are—you'll find this kind of loan easy to obtain and less costly than some other sources of funds.

There are two basic requirements that your repair or improvement project must meet: It must protect your property or increase its usefulness and livability, and it must become an integral part of the property. For example, you can get a loan for a new heating system, additional rooms, roofing, painting inside or out, landscaping, fencing, or installation of a built-in lawn sprinkler system. Improvements or additions that are temporary or removable won't qualify—such as furniture, appliances, burglar alarms, title searches or appraisals, or such luxury items as barbecue pits, swimming pools, or tennis courts.

If you own a large house and plan to convert it into a multiple dwelling unit, you can borrow more than the \$3,500 ceiling. How much more depends on the number of units built. For example, you can get a \$5,000 loan for two family units, a maximum of \$15,000 for six or more units.

You don't have to go to a bank to apply for a loan. Most established contractors are authorized by local banks to initiate these borrowings; check with yours to see if he can do it. Once your contractor has estimated the cost of the work, you can file your loan application through him. He takes it to the bank, which then checks your eligibility.

For these FHA loans, the requirements are quite simple. Of course, you must be a good credit risk. You must own the property or have a financial interest in it. For loans over \$600, you must have lived in the house for at least 90 days.

One warning: If your improvements are going to cost more than the \$3,500 limit for FHA loans, don't raise the additional money through a mortgage with another loan source. If you do, you won't be able to get the FHA-insured loan.

The contractor can start the job as soon as the bank approves the application. When the work is completed—and you are entirely satisfied—it is customary to sign a completion certificate. At this point, your loan becomes effective—that's when you sign a note. You may authorize the bank to pay the contractor, or the bank may give you the amount to pay the contractor directly, without the formality of a completion or authorization certificate.

What about repayment of the money you borrow? You can start paying off the loan in monthly installments starting anywhere from six days to two months after you sign the note. You can repay the full amount in any length of time you choose, up to the FHA-fixed maximum maturity.

Loans are discounted on the basis of \$5 for each one-year \$100 loan.

#### PERSONAL BUSINESS (Continued)

BUSINESS WEEK SEPT. 8, 1956 In other words, you would pay back \$105 for a one-year \$100 loan; if you should borrow \$1,000 for three years, you would pay an extra \$50 for the first year, lesser amounts as the unpaid balance declined in subsequent years (total cost for such a loan would come to \$130.28 on this sliding scale).

If you should be able to prepay the balance of a loan, check with your bank about getting a refund on the discount you have already been charged.

The man in the oxford gray flannel suit is here to stay; the color and material have become classic in men's clothes. However, you won't be seeing so much charcoal gray this fall; its popularity is on the wane.

The next few weeks will be the best time to get new clothes. That's when the stores have the most complete selection. Here are some other men's fashion tips from Brooks Brothers, top New York clothing store:

- Suits of unfinished worsted and muted glen plaid will be especially popular among executives.
- Gray, brown, and blue remain the basic fall colors, but there will be a trend toward dark blue, both plain and in patterns.
- Hats will run to lighter weight, narrower brims. Ties, too, are trimmer-looking—narrow, some with square ends.

Current revivals include knickers, the derby, and the double-breasted, brass-buttoned blue flannel blazer. Many fall golfers will switch from walking shorts to knickers, the fashion experts predict, and the blazer will substitute more often for the sports jacket as a companion to gray flannel slacks. You'll see the derby worn during the day with a chesterfield, but never in the evening with dress clothes.

Sport shirts are currently popular in "authentic" tartans, checks, and madras patterns, and in the two-color striped cottons.

There'll be more sweaters worn this year, especially Shetlands and cashmeres.

Travelers will be able to get through Customs a lot faster from now on. A new baggage declaration form initiated last week greatly simplifies the procedure of declaring the purchases that have been made abroad. The traveler merely checks a few "yes" and "no" questions on the new form. He no longer has to list all items that have been bought abroad—just those that exceed his allowed exemptions (BW—Apr.7'56,p157).

Tax note: Don't forget to keep a record of any transportation expenses, meals, or accommodations that you pay for in the course of rendering services to a charitable organization. You can't claim any deduction for the value of the personal services you donate, but any out-of-pocket expenses are tax-deductible.

People who take pictures as they travel might find a new booklet handy. Worldwide Photographic Headquarters is the title; it gives names and addresses of photofinishers and film suppliers all over the world who have volunteered assistance to amateur photographers. The booklet is available, free, from Sales Service Division or Export Sales Division of Eastman Kodak Co., Rochester 4, N. Y.



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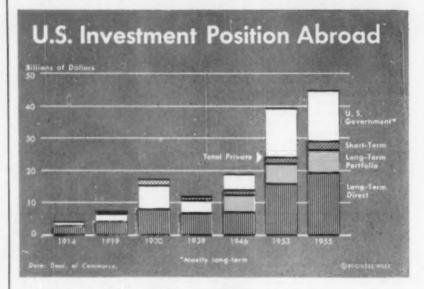
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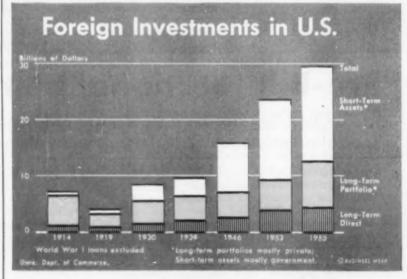
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#### CHARTS OF THE WEEK



#### **U.S. Capital Flows Out Faster**

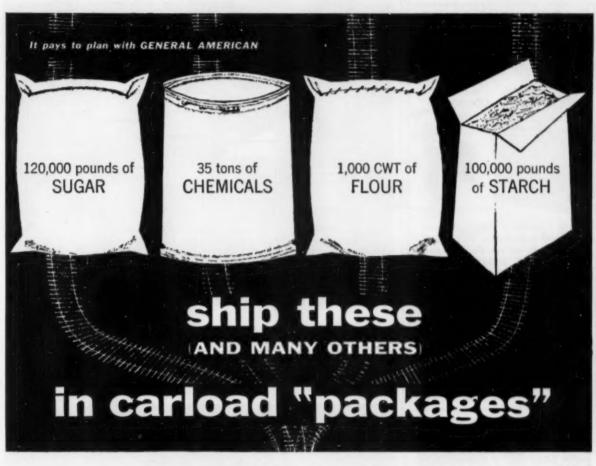
Most of the rise in U.S. investment abroad has been of a long-term nature. About 95% of U.S. government investment overseas and some 92% of the private investment in 1955 was longterm. And most of the private long-term portion, except for the period of the 1930's, has been made directly in plants and equipment. As for the other side of the coin . . .

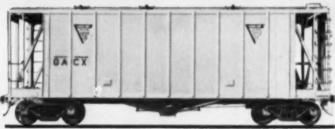


#### Foreigners Put More Into U.S.

Foreigners have been increasing their investment in the U.S. also. But their total investment is about \$15-billion smaller than U.S. investment abroad. The character of foreign investment has

changed sharply since World War I. Then short-term assets were a small part of the total; now they're the most important part. (To see where U. S. foreign investment is going, turn the page.)





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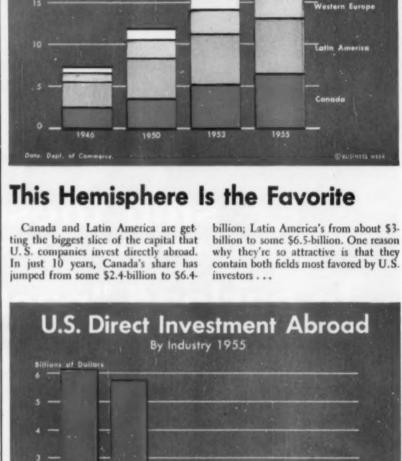
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**Direct Private Investment Abroad** 

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More than half the money U. S. companies invest directly abroad goes into manufacturing and petroleum. In fact, manufacturing gets almost three times as much as mining and smelting – some \$6.3-billion last year, compared to not quite \$2.2-billion for mining and smelt-

ing. This expansion of U. S. enterprise abroad through foreign branches and subsidiaries is nearly three times what it was at the end of the war. The study from which all these figures are drawn was made by the Commerce Dept, (BW-Sep.1'56,p103).



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As its medicine for farm equipment slump, Deere & Co. is trotting out new models. It's one way in which ailing . . .

# Farm Machinery Looks for a Cure

FOR THE FARM machinery industry right now, it's a little like the morning after. Industry men—except for the always glowing sales executives—give out with such phrases as "lousy conditions" and "abysmally low" production. The story is of high inventories and full pipelines, sliding sales, layoffs, shutdowns—with a few gains here and there in the picture. Even the current upturn in farm income doesn't arouse too much excitement.

Of course, such talk isn't new (BW—May12'56,p26); the industry has been going through something of a wringing-out for some time, even though production did take a jump in 1955. But the morning-after feeling is worse now

because, as one company president frankly puts it, the industry set its 1956 sights too high and "it has to cut back production further than sales have declined, because we manufactured too much."

 Turning a Corner?—So—though you can detect what one official calls a "mild spirit of optimism for the immediate future"—the industry is looking for a pick-me-up.

There's talk of merger (despite the J. I. Case Co.-Oliver Corp. flop), and of expansion abroad. There are price rises. Men look hopefully—but not too hopefully—to the fourth quarter. Deere & Co. (which cut production earlier than most) is banking on a complete

new line of its John Deere tractors, and is busy showing them off (picture). Massey-Harris-Ferguson, Inc., has a new construction machinery line to offset the farm equipment slump.

But beyond that, the industry is peering ahead for the corner it hopes is there. It's not quite sure just what's around the corner, though (no two companies seem to be wearing the same glasses, and some uncertainties block the view).

Long range, however, the optimism is a lot thicker than for 1956 (the same company that laments today's "lousy" conditions talks of tomorrow's "tremendous" potential market). And there's general agreement that today's wringing

out and shaking down is bound to mean changes in the industry.

• Glimpses—So far these changes can only be glimpsed—but there are some pointers. The old replacement market that meant replacing the farmer's tired old mules with a tractor is a worked-out vein, industry men agree. Few big, unmechanized farm areas are left. But they see a different replacement market in selling newer, more efficient equipment to replace the old.

They see a growth market, too—not only in the country's natural population growth, but in the changes in agriculture itself (BW—Dec.10'55,p106). The trend to larger-size farms increases the demand for equipment. And the farm equipment men see the smaller, family-size farms turning more and more to machinery to hold onto their place in agriculture and better their owners' condition.

All this will mean changes in sales methods, in tractor design, perhaps in the manufacturing companies themselves—though no one is ready yet for more than a guess, or a salesman's vision, of what the changes will be.

#### I. Near View

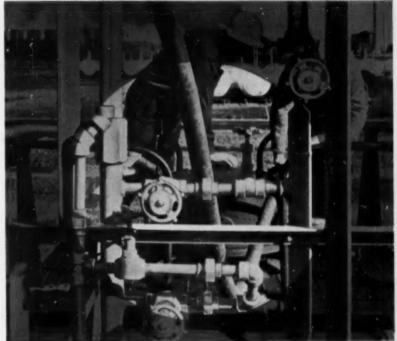
But to get to that "tremendous" future market, the industry has to start almost from scratch. And it has to get around that 1956-57 comer before it can see very far ahead. Just how far it has to go you can see in the fact that right now there are 11 used tractors sold for every 10 new ones.

Here are just a few samples of what's happening. International Harvester Co. expects farm machinery sales for its current fiscal year (ending Oct. 31) will be about \$60-million under last year's \$385-million. Its tractor inventory includes about 35,000 in dealers' hands, 20,000 in district sales offices and in transit, 2,000 in factory yards. Harvester plans more layoffs, but looks for some sales improvement in the current quarter.

Minneapolis-Moline Co. is ending production at two outmoded plants. J. I. Case Co. is consolidating operations. Six important Wisconsin manufacturers have let 3,400 workers go (but big, diversified Allis-Chalmers Mfg. Co. was able to shift 500 workers from tractor shops to other lines at West Allis, Wis.). Oliver Corp.'s estimated net after taxes came to \$402,000 for the first nine months of fiscal 1956—against \$3.9-million for the 1955 months.

One bright spot seems to be at Ft. Atkinson, Wis., where James Mfg. Co. says it's hiring and has sales running ahead of 1955. James is a specialist in heavy barnyard machinery. (In general tractors seem to be hit the worst; but though tractors are the biggest single item, you can't overlook the 60% of

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". . . rising costs make a further general price rise seem likely . . ."

STORY starts on p 192

farm machinery dollar sales that's accounted for by implements.)

· Light in the Gloom-For the rest of 1956 there are a few rays of hope. Pres. W. C. MacFarlane of Minneapolis-Moline sees the production and inventory situation getting under control at both the manufacturers' and dealers' level.

Oliver expects to have its tractor position "where we want it" by the end of October, and thinks the year may wind up slightly better than 1955. Deere looks for things to be moderately better for the rest of the year, and is looking into expansion abroad, where it sees a heavy demand for mechanizing. Deere's capital expenditures rose to \$12-million this year from 1955's \$9.7-million, and it expects to go even higher next year.

However, the people at Implement & Tractor, an industry trade paper, think the comeback will be slower and more painful "than sales managers like to contemplate." They see 1956 ship-ments falling some 15% below 1955 in dollar value, think 1956 will about match 1954 in dollars but not in units (because of price increases since).

Rising costs-steel among other things -make a further general price rise likely. International Harvester, for one, has announced a 5% across-the-board increase

effective Sept. 15.

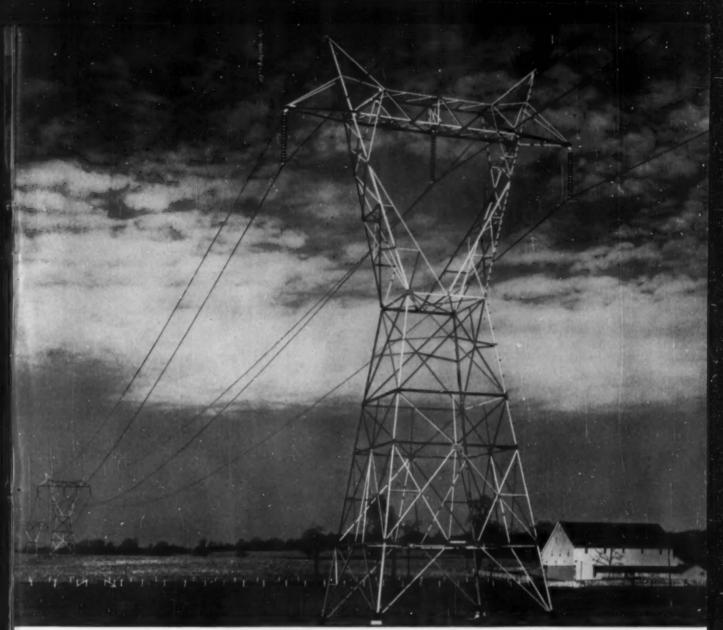
· Clouded Crystal Balls-Industry men shy away from longer forecasts-there are too many unpredictable factors. And, as one company officer put it, "the impact of politics and the weather is greater on our industry than any other."

Right now, politics is flourishing. Some manufacturers are wondering, too, about the effects of the soil bank-if land is taken out of production, will farmers buy machinery, they ask. There's hope, of course, in rising farm income, but what this will mean for 1957 and beyond will depend on how far farm income comes back after its five-year slide, and on the 1957 crop picture.

#### II. Distant Vision

To many farm machinery men, though, the distant view seems clearer than what's just around the corner-perhaps because any obstacles don't loom so close. Pres. MacFarlane of Minneapolis-Moline, for example, sees the industry cautious now about increasing production, with the result that "I can see a machinery shortage in about three vears."

Irving A. Duffy, vice-president and



Blaw-Knox Towers on transmission lines of Pennsylvania Power and Light Company

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general manager of the Ford Tractor & Implement Div., thinks farmers are being weaned to a new concept of farm operation that will give a big boost to mechanization and machinery sales.

Model Changes—There's little agreement in the industry, however, about how it's going to go after the market it sees in "putting better machinery onto already mechanized farms." The industry's present plight resembles Detroit's, so perhaps it's natural to think of Detroit's ways of winning customers with model and style changes and "planned obsolescence."

Farm machinery men, already thinking along that line (BW-Feb.26'55, p62), are turning to it again. Says a Deere official: "The domestic farmer needs and will need more machinery, and some of it isn't even invented yet." There's talk of torque converters, automatic transmissions, power steering as standard equipment for the future with new models coming out at least every three years, instead of every six or eight.

But there are limits in farm equipment changes that Detroit doesn't face. Volume is smaller, and evolution of farm machinery is more gradual. It's not uncommon, a Harvester man points out, for a basic tractor to be in production eight or nine years. Improvements center around one feature, rather than coming in a radical annual change.

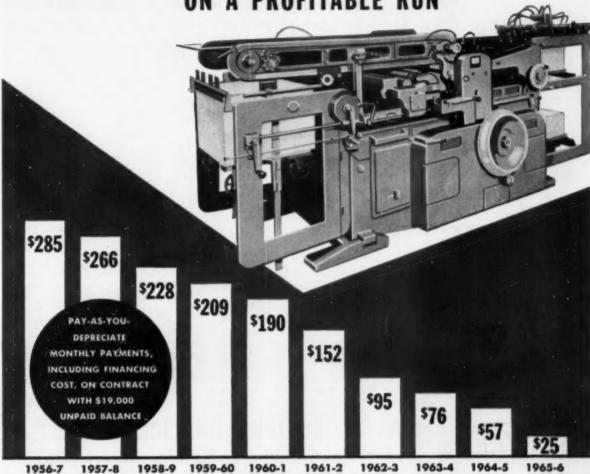
• Accent on Sales—The farm equipment industry might take a leaf out of Detroit's book of sales gimmicks, too, but so far there's little sign of a change in selling methods. With about 4.28-million tractors in service, 10% of that figure ought to be the peak annual replacement market, according to W. G. Scholl, executive vice-president of Allis-Chalmers; but this year the industry will hit around 5%. There's no formalized trade-in system worked out, or planned; it's left pretty much to the dealers.

Many believe that better financing arrangements are vital. Ford's Duffy holds that the key to the future of the farm machinery business lies in selling farmers on long-term depreciation of machinery.

• Fewer and Bigger?—Some industry observers see a change coming in the industry itself. Old plants now being shut down may never be reopened, they say, and a lot of obsolete manufacturing capacity is likely to be junked.

Others are convinced that the small company just can't survive, that mergers are bound to come. J. I. Case Co. and Oliver Corp. got as far as exploratory talks this summer, but decided this week to go no further, at least for now. Earlier in the year, there were reports of merger talks between Minneapolis-Moline and both Case and Oliver—and M-M is said to be still on the lookout for a merger opportunity. END

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#### Oilmen Face Even Longer Odds

No one seems to feel sorry for oilmen, but they can tell hard-luck stories that'll make you cry. Here's the kind of heartbreak they have to go through.

New odds have been posted in the gamble that is known as the oil industry. They're steeper than ever.

The old odds against success of a wildcat operation (BW-Mar.24'56, p140) were bad enough: 9 to 1 against striking any oil at all, 16 to 1 against a small strike, nearly 1,000 to 1 against a really big hit. Now Frederic H. Lahee, Dallas consulting geologist who was with Sun Oil Co. for 37 years before his recent retirement, has studied results in 20.478 wildcat explorations in six years. He finds odds of:

• 14 to 1 against hitting any oil at all.

• 42 to 1 against finding a 1-million-bbl. field, regarded as about the

minimum for economic production.

• 427 to 1 against finding a 25-million-bbl. field.

• 706 to 1 against a 50-million-

He doesn't even try to calculate the odds against discoveries like the Conroe field, brought in by George Strake of Houston and already yielding some 335-million-bbl. of oil.

· Winner Take All-Of course, it's the long odds that make the big payoff, that keep wildcatters from settling back to live on what non-Texans would consider a rich income from a moderately good strike. It keeps them hustling still for the big pot of gold, the 100-millionbbl. field-and often going broke in the

Even Dad Joiner, who was 70 when he brought in the biggest field of all-East Texas-refused to rest on the \$3million he got by selling his interests. He lived another 11 years and died flat broke from drilling dry holes.

#### I. Wildcats Can Scratch

There seems to be no limit to the trouble a wildcatter can run into, particularly as the likelier places get to be combed out pretty well. Standard Oil (N. J.) sank something like \$40-million in drilling all over Venezuela before it produced a single barrel of oil. Persistence paid, though-the company is producing more than 1-million bbl. a day now in Venezuela.

Then there's Harold Boysen of Houston, who drilled 81 consecutive dry holes in 20 years before he lost his amateur standing. When he did hit, it was a mere trickle from a stray sand only 633 ft. below the surface of Webb County, Tex. The flow of 40 bbl. of oil a day will hardly make him rich. Boysen drilled one well to 10,700 ft.

in Mississippi "on the most beautiful geophysical picture the world has ever known." And, he adds, "It was the driest well ever drilled."

· No Automatic Riches-Jack W. Frazier, also of Houston, is an object lesson to anyone who thinks merely finding or owning an oil well makes a man a millionaire. By 1939, he was indeed a millionaire from a run of three tremendous strikes. He was considered the king of the wildcatters, the man most likely to be seen driving a different Cadillac every day of the week

Then he hit a run of fantastically bad luck. From 1939 to March, 1954, he drilled more than 200 wildcat wells, made 12 discoveries good enough to put into production, yet had nothing to show except a \$1-million debt. Not one of the 12 discoveries was profitable. The best showed a net loss of \$4,000; the total loss on the 12 wells-not counting the 188 dry holes-was precisely \$287,911.13.

· Born Too Early-Sometimes, too, a wildcatter simply happens to be living in the wrong era. In all his hard-luck days, Glenn McCarthy never had a more freakish setback than in 1939, when today's technology and marketing situation might have saved him from going broke for the first time.

McCarthy was convinced he was about to bring in one of the biggest fields of all time, near Palacios, Tex., and he got Houston Oilfield Material Co. to stake him to four rigs worth nearly \$1-million. Sure enough, he brought in a well at 8,682 ft. (very deep for those days) that produced 175 bbl. of oil a day. He soon had his four rigs

Suddenly, pressures began building up terrifically. Today's techniques might have brought them under control, but no one could do much about it then. All four wells blew out, and witnesses still talk of seeing thousands of feet of pipe flopping high in the air like gigantic spaghetti.

Ironically, the gas that caused this disaster-and that was worthless then even if it could have been controlled and drawn off commercially-could have made McCarthy another fortune if it had come 10 years later, when there was an eager market.

As it was, McCarthy went broke, and Homco nearly did, too.

· Success Stories-As mindful of the



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high peaks as the low valleys in the careers of the McCarthys, Strakes, Fraziers, and Dad Joiners, oilmen can tell without envy of another kind of success story-a sort of "rags to social security" chronicle.

For example, there was this Houston machine shop owner who was bitten by the oil bug 10 years ago. He sold his shop and his home to raise about \$200,-000 working capital. He drilled two holes-both dry. To keep his family in groceries, he turned to roughnecking (working on oil rigs). The happy ending: He's now a well-to-do truck farmer in the Rio Grande valley.

And there was the young Oklahoman who inherited \$250,000 and came to Texas to pyramid his money. He sank all he had in three or four wellsall of them dry. But he's not badly off today. He draws about \$700 a month as a chief clerk for an oil company.

#### II. No Sure Things

Many oilmen regard drilling in proven fields as something like shooting fish in a barrel. But there are no really sure things in the oil business. Pete and Vernon Frost, prominent Houston operators, can tell you.

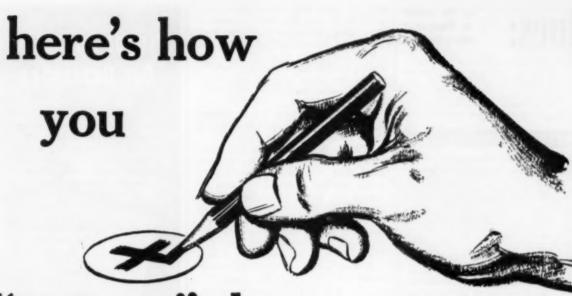
A few months ago, the Frosts brought in four excellent wells in South Texas, one of them "a 268-bbl. well at about 500-lb. pressure." It seemed all they had to do was put down some more wells and sit back for a big payout. They spotted a fifth well 660 ft. from each of three earlier producers, to tap oil at two levels.

They drilled to the first producing level all right, then bypassed it to reach the second and deeper level. Surpriseno oil. Meanwhile, the first pay level had "froze up" (the drilling muds con-gealed) and had to be blasted loose. They nearly lost the whole works. In the end, says Vernon Frost, it cost \$140,000 for a well that is "bringing us in \$6 a day.'

To top it all, the four producing wells began to peter out. "I haven't any idea what happened," says Frost, "but the best well we had-the 268bbl. one-has dropped to 50 bbl. a day at only 50-lb. pressure."

· Shale-Shock-That's only one of the "sure" things that disappointed the Frost brothers in the past year. In Willacy County, Tex., last winter, they drilled only 2,000 ft. in a producing field to get a 150-bbl.-a-day well. Only trouble was, the ratio of gas to oil was so high that the Texas Railroad Commission wouldn't let the Frosts take out the oil-it might release the gas that provided pressure for the whole oil field.

The Frosts sighed, plugged up the sand at the 2,000-ft. level, and went



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deeper. Again they found good sand, at 6,700 ft., only this sand contained a lot of shale. Water in the drilling mud caused the shale to swell, and that sealed off the sand so no oil would flow. The Frosts poured acid down the hole to cat up the shale, and the well finally began to yield-a trickle of about 5 bbl.

This ill-starred well cost the Frosts about \$155,000 to complete-about as much as three average wells.

Within the past month, the Frosts have drilled four wells-north, east, south, west-of a new wildcat hole that's giving another group of operators 60 bbl. a day from the 2,600-ft. level. None of the Frost wells is more than 350 or 375 ft. from the producing well, but every one of them turned out dry, at a cost well over \$100,000. The brothers doubt that they'll try a fifth well-they've run out of compass direc-

#### III. Underground Mystery

The only thing sure, oilmen will admit, is that we don't know every-thing about what lies underground, despite all our science and engineering. Oilmen still get startling results when they poke into the earth.

Alwyn King, a Houston independent, once thought he had hit a banner oilfield in Frio County, Tex., though studies showed the oil might have to be coaxed out by sand-fracturing. Far from needing any such help, when the drillers got to 6,000 ft., the well blew out in an old-fashioned gusher. Thousands of gallons of unrecoverable oil rained all over the landscape, then-nothing. The drill had hit a rare formation, an underground cavern crammed with oil under great pressure. All that remained was an empty hole.

Sometimes an isolated pool will yield less spectacularly for a few months, then die out because it has no connec-

tion with a real oilfield.

• Make Up Your Mind-Surprises can work the other way, too. Ralph Johnston of Houston had a quarter-interest in a Wharton County (Tex.) well in 1946. It failed to give oil but yielded some gas. The owners thought first of plugging it up and abandoning it, rather than spending another \$10,000 or more for setting pipe. In the end they decided to go ahead.

Soon the gas ran out, but theninstead of having a dry hole-the syndicate suddenly had an oil well. What had happened was this: The drillers chanced to hit a pocket of gas that was under enough pressure to keep oil out. When the gas had been drawn off, oil flowed in. The well yielded an average of 40 bbl. a day for six years; under pumps, it's still producing about 15 bbl. a day. END

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#### The Challenge in Atomic Power

With Labor Day behind, the time has come to button up next year's budget, to make final decisions on what new projects are to be undertaken and how they will be financed. And it's getting close to the final hour for a large segment of industry to make some important decisions on future activities in the atomic field.

The new research facilities planned by AMF Atomics and a group of associated firms (page 110) is representative of the promising strides being made in this important phase of nuclear development. But another area of our atomic program is still clamoring for attention of industry's leaders. And they will have to move fast to plug up the gap in atomic power.'

The first big British atomic power plant will go into operation in October. Both the United Kingdom and the Soviet Union are building large-scale atomic power plants by the dozen. We have only one such plant anywhere near completion, though six others are definitely planned. So the prospect is that the British and Russians will build nuclear power plants faster than the U.S.

With many less-advanced nations hoping to obtain such plants as soon as possible, this lead in atomic power could have major significance in the cold war as well as in the race for world trade. The British, of course, seek only to end their acute power shortage and win new equipment markets. But the Russians are out to grab our world leadership in atomic energy and dissipate the wide international enthusiasm for the Eisenhower atomsfor-peace program. Getting a jump on us in learning to build and operate big atomic power plants would surely advance the Soviet effort.

All this has become involved in domestic politics, too. Legislation calling for the government to build a number of large atomic power plants—the Gore bill—was defeated by only a narrow margin in the last Congressional session. It is certain to be revived next year if industry's nuclear power program remains static until Congress reconvenes.

Certainly a big government construction program makes little sense, except as a last-ditch move to maintain our diplomatic position. Almost inevitably, it would put atomic development in the middle of the old public-private power fight. And it would be a step back toward the strict government atomic monopoly that we abandoned just two years ago.

True, it is hard to see how industry, relying on its own resources, can build many more atomic power plants. Big plants cost like sin—from \$40-million up. And, at this stage of technological progress, no one can build one that will produce power

as cheaply as the more conventional facilities.

The answer may well lie in some form of government assistance in financing. It might be patterned after the arrangement between the Atomic Energy Commission and the Duquesne Light Co. Duquesne is furnishing all the non-nuclear gear for a plant and helping AEC with funds for the atomic portion as well. AEC will own the nuclear gear, but Duquesne will operate the entire plant and market the power.

It seems to us that it is very much to the advantage of both industry and the government to find ways of working together on something like the pattern set by Duquesne and the AEC. Industry can gain by taking the initiative before pressure builds up again for federal atomic projects.

And it is clearly to the nation's advantage to put more private funds—rather than public—to work on the power program.

#### Restraint on Wages

Fortunately, the United States isn't confronted with an inflation problem as serious as Britain's. The dollar isn't poised on the razor's edge of devaluation; nor are we faced with quite the necessity to keep price tags low in order to sell at export.

Nevertheless, there is a lesson for any prudent man in England's present drive to restrain—or even prevent—a round of wage and price increases.

To Britain, this is economic life and death. To us, it is a matter of preventing erosion of fixed incomes—the money we have in E Bonds or the retirement income we are counting on. Most of us have neither the mind nor the means to hedge against inflation (by buying stocks or real estate).

Perhaps it is true that wage boosts are as much the result as the cause of inflation (page 47). Perhaps they won't cause a runaway price rise. But even a gradual price rise erodes fixed incomes.

Thus incessant "rounds" of wage increases can't forever be tolerated. If they outrun our vaunted productivity—as clearly they have—prices have to go up. And while workers may be able to keep ahead in this game, a great number of others do not. These others, who depend on fixed incomes, sooner or later must be priced out of the market. And, when they are, the size of the market has to shrink.

There you have, purely and simply, the chain of events that causes deflation. Industry suffers, labor loses many of its gains, and there is a general melting of values.

Restraint on wage demands has much to recommend it, here as well as abroad.

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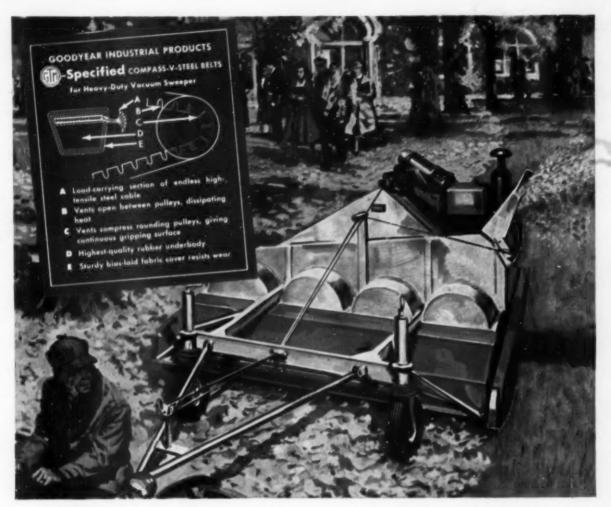
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